

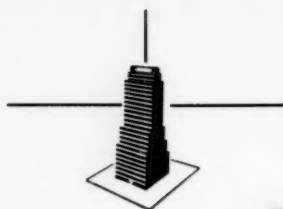
THE AMERICAN PSYCHOLOGIST

VOLUME 13



NUMBER 5

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THE AMERICAN PSYCHOLOGIST

Journal of the American Psychological Association, Inc.

Volume 13

May, 1958

Number 5

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THE AMERICAN PSYCHOLOGIST is published monthly at Prince and Lemon Streets, Lancaster, Pennsylvania. Subscription: \$8.00, single copy: \$1.00. Communications on editorial and business matters and advertising should be addressed to the American Psychological Association, Inc., 1333 Sixteenth Street N.W., Washington 6, D. C. Address changes must reach the Subscription Office by the 10th of the month to take effect the following month. Undelivered copies resulting from address changes will not be replaced; subscribers should notify the post office that they will guarantee second-class forwarding postage. Other claims for undelivered copies must be made within four months of publication.

Entered as second-class matter January 12, 1950 at the Post Office at Lancaster, Pa., under the Act of March 3rd, 1879. Acceptance for mailing at special rate of postage provided for in paragraph (d-2), section 34.40, P. L. and R. of 1948, authorized August 6, 1947.

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CONTEMPORARY ISSUES OF CONCERN TO PSYCHOLOGISTS

ROGER W. RUSSELL

THE public interest in recent technological developments has led to many requests that the APA Central Office watch current events and summarize information on issues of concern to psychologists. Because of the complexity of the issues involved, the first attempt in a continuing effort at a comprehensive review has not been feasible until now. The review which follows is in no sense a position statement of APA; rather, it summarizes information and opinions expressed by individual psychologists regarding current issues. Many issues are presented, so many that the review may give the incorrect impression that psychologists are taking a rather "cocky" attitude toward the contributions they are capable of making; the careful reader, however, will understand that psychologists obviously cannot contribute to the solution of some of the national issues, are chastising themselves for not having paid more attention to other issues, and are pointing out that they have relatively little to offer *now* toward the solution of yet other issues. On the other hand, there are areas of national concern in which psychologists have particular competence and others in which their knowledge and skills may assist in the search for answers. Opportunities to make contributions seem to be more numerous now than ever before.

It is obvious that this review cannot be the product of one author's efforts. It brings together contributions from many sources. Among these are the comments and points of view of many APA members, so many that it is not practicable to mention them all by name. The review draws its information from these comments, from speeches, discussions, analyses of current events, committee reports, legislative proposals, journals, newspapers—from any available source which considered issues of possible relevance to psychology. The task of searching many of these sources—a considerable task in itself—required the assistance of many willing participants; the assistance of Michael Amrine, the APA's Public Relations Consultant, in all phases of preparing this review is acknowledged with particular thanks.

The Current Scene

Space exploration and other potentialities of science are receiving the kind of attention science did in 1945 and 1946 following the atomic bomb. But with a difference: There is no recent precedent for the present kind of re-examination of American goals and methods. "Science and education" have caught the public imagination.

President Eisenhower has made major addresses on "Science and Security." James R. Killian, Jr. has been appointed Special Assistant to the President for Science and Technology. There have been many meetings of the advisory committees to the White House and to major agencies. The Secretary of State has named as Science Advisor the current President of the American Association for the Advancement of Science, Wallace Brode.

Scores of bills upon some phase of education have already been introduced in the eighty-fifth Congress. Proposals have been made to establish

a federal Department of Science. Professional educators feel that all previous public debates—including such large enterprises as the White House Conference on Education—were small compared with the public attention and consequent legislative proposals focused upon the methods and goals of our schools.

It is true that much of the public discussion was first centered upon weapons and in fact upon particular types of weapons. But in a very short time it became apparent, at least to the Washington scientific community, that the government was truly in a mood to receive the counsel of scientists. Most present discussions of government support seem to be couched in the terms "science, engineering, or mathematics," with specific references to foreign languages appearing occasionally. Some of the present proposals seem to be capitalizing on these prestige words. But, many natural scientists and mathematicians have the attitude: support

should be given to all disciplines. This does not mean, however, that general government support will be granted; legislators will make the final decision.

Since government affairs and affairs of science are so interwoven in recent events, there is a tendency for much of our attention to focus upon certain decision making bodies in our government. But it must not be overlooked that many private associations may make major decisions which will greatly affect the future. For example, the American Association for the Advancement of Science, the Scientific Manpower Commission, the American Council on Education, the National Education Association, and the National Academy of Sciences are very active in the current scene, as well as private groups of citizens such as the informal committee of behavioral scientists, headed by James G. Miller, which issued the booklet, *National Support for Behavioral Science*.

The Psychologist Citizen

Just as any other citizen, the psychologist is a member of the national community. On issues affecting the community, he can certainly speak as an individual citizen. When problems of fact are involved, it is hoped that citizens competent in the subject matter will be called up for expert information; in such instances involving knowledge of psychology, it would be expected that the psychologist will be called upon and will speak for himself as an expert citizen of the community. The exercise of this citizen-right is especially crucial when the scientific and professional portion of the national community is affected or has definitive contributions to make. In the present climate of affairs, it would seem to be the duty of those competent in the relevant subject matter areas to make the necessary information available.

But, in addition, the national community may be faced with problems involving judgments, goals—or more important in this instance—the social implications of facts and actions. There is a growing feeling among scientists that the “informed opinion” of individuals in the scientific and professional community is of value and that the citizen’s right or duty also entails the contribution of the best opinion available.

The above are functions of individuals. What may or should be expected of a scientific and pro-

fessional association such as the APA? An editorial in the January 10 issue of *Science* noted that

... difficulties do arise when a scientific association speaks out on the social consequences of new findings ... the danger lies in the possible introduction of an authoritarian note to the competition of scientific ideas.

The APA, as an association, currently follows the policy of sponsoring, encouraging, and assisting as it can only the availability or dissemination of factual information. It is not unlikely that the rush or pressure of events may seem to force the association to adopt the role of advising on social implications; but each such instance must be most carefully considered, and the representatives of the APA must look to the membership for all possible guidance. In instances, however, when the consequent affect is upon the scientific and professional community itself, the APA may be required to speak in behalf of its own membership and of others in the scientific and professional community.

The current need to look again at the roles of both individual psychologists and of their association may raise some fears: fears of “crash” programs that may do considerably less good than the uninformed expect, fears that subsidies and other federally initiated programs may distort the normal growth or activities of psychology. But many members of the APA have commented to the effect: Time waits for no man; and maybe space does not either. When the making of history is accelerated, when the need is apparent, is it not wiser to use the information we have, to make available the best of our current information and opinion, to participate in the experiment rather than leave it to the vagaries of necessity and chance.

There is evidence on all sides that human behavior is recognized as a basic factor in many of the important issues with which the nation is currently faced. One of APA’s senior members writes:

... hardly a day passes that some of my colleagues in the government do not ask me specific questions about the role of professional psychology in planning for the future of science, and indeed for the future of our country in a more general sense.

A number of our members have already been called to advise government agencies on matters which will influence legislation and administration. Others are already participating in formal and informal conferences considering various aspects of science

and education. The APA has been heavily involved in keeping informed of developments, in maintaining regular and frequent contacts with other scientific and educational organizations, in discussing contributions psychology might make at present and in the future.

EDUCATION

Concern over the psychologist's role in educational affairs led, in 1954, to the APA's Thayer Conference on the functions, qualifications, and training of school psychologists. Now that unusual events focus particular attention on education, the issues again come to light:

... take stock of our own attitudes toward educators and the training of teachers.

... soul-searching and practical thinking about ways and means to communicate with the educators . . .

... spend some time and thought on ways and means of . . . lending a hand to the improvement of education.

Educational psychology should be brought more centrally into the main tent of psychology.

... become more active in the teacher-training institutions, and in the professional journals that educators read.

There is a firm conviction that psychologists can contribute significantly to various aspects of educational programs and that they will accomplish much more if they collaborate with other specialists concerned with the same general problems.

There are some attempts to make professional educators the scapegoats of what is claimed to be America's "soft" approach to education. Much of this talk has contributed only to confusion. A re-evaluation of the nation's educational system was already underway; in the present circumstances, it undoubtedly will be speeded up. Unfortunate effects of too much loose talk may put educators on the defensive and create discord between educators and scientists.

Psychologists are already participating in government action resulting from the current concern over education. Psychologists were among the advisors when the administration's program on education was first being formulated in the Office of Education. Congressional committees hearing current education bills have asked for the names of psychologists particularly competent in the various aspects of selection, guidance, and education cov-

ered by the bills; several psychologists have testified before both Senate and House committees.

Some psychologists have expressed themselves strongly on what they have called the "tradition of equalitarianism." They believe that this has meant the same education for all regardless of individual differences and has been a major barrier to raising the nation's intellectual and scientific productivity. For others these are fighting words and not factually true. In any event, the President's recommendations appear to be based upon the principle that truly democratic education means recognizing the needs of each person and providing educational opportunities accordingly. Some are

... afraid that the emphasis on science will lead to a retreat from the newer and sounder techniques of education to a regression to the restrictive and unimaginative role-drill kind of teaching which often existed fifty years ago.

Others point to the "cultural lag" in putting new methods to work even after they have been developed and accepted as desirable.

Identification of Talent

Individual differences in all dimensions of man's constitution and his behavior are basic realities. Society, willy-nilly, attempts in various ways to adjust its institutions to these differences. A major concern to psychologists, and others, is that the current emphasis on science and mathematics may distract attention from the necessity to consider varying levels and talents of all kinds in the national planning and actions. It may be overlooked that the national welfare requires the contributions of a great many talents in order to support the contributions of a single "creative" person. It is important that the nation adequately utilize the talents of all its citizens. This means extending identification and training to its entire population; this, in turn, has important implications both for the development of techniques of identifying talent and for the effective use of the information they provide.

It is of interest to observe the apparently wide differences of opinion among experts as to the effectiveness of present psychological techniques for identifying talent. The range is indicated by the following two comments:

On the technical problems of selecting bright youngsters we can certainly do a lot, and do it quickly . . .

Tests [are] of very little value in this situation . . . save the profession from the debacle sure to follow an oversold testing program.

Some, perhaps most, of this difference of opinion arises from different views as to the goals of a program for identifying talent and from assumptions regarding the breadth of information upon which "identification" would depend.

If the goal is to identify only those persons likely to be creative in science and mathematics, then real difficulties arise. As yet, there appear to be no good predictive measures for creativity. The possibility has been suggested that:

If we select for general aptitude . . . we will get . . . the potentially creative . . .

If, however, the goal is to identify talents of all kinds, present psychological techniques can be of great value. The statement has been made that, in the USSR, effective ability of the student is what determines whether he stays in the system. Presumably "effective ability" includes motivation and personal adjustment as well as talent, and prediction of success in school—and after—would be more accurate were these aspects of behavior included in an identification program. Including them depends upon the existence of techniques for assessing them. In their comments, psychologists have suggested the use of such techniques as interest inventories, biographical data inventories, and tests of personality or adjustment. They have suggested that the value of present psychological techniques for identification of talent may be enhanced by the use of information based on past achievement and on a sound counseling and guidance program. This view appears to be shared by President Eisenhower's advisors, for his recommendations include provisions for the improvement of school records systems and for counseling and guidance programs.

The following comment highlights the importance in any selection process of the environment in which a person develops.

. . . stop talking about selection as if the identification of talent made sense when considered independently of the institutions in which it is supposedly going to be developed.

The effects of this wider background are emphasized by studies which show differences in the number of talented persons from different socioeconomic levels and geographical localities who take advan-

tage of present educational opportunities. One approach to conserving the nation's talent is to seek a better understanding of these environmental factors and to make fuller use of those whose education is being restricted by such factors.

Another issue of concern to psychologists is: How early in life should talents be identified? By far the most frequent answer is: If it is the American democratic view of education that each person have the opportunity to realize the full extent of his talent, then identification of talents as early in life as possible is desirable.

. . . the selection process practically can and should begin in the earliest grades of elementary school. . . . Frank recognition of individual differences in educability at an early age could have a tremendous effect upon the value of the products of our educational system.

Individual differences in rates at which talents develop is a closely related issue which can have serious effects upon a program for identification.

. . . [we] must recognize that for different persons various abilities, aptitudes, and skills appear at different ages.

A program for identifying talent should take these individual rate differences into account by providing for observations of development over a period of years. The effects of a one-shot identification program are apparent in the present British system of selection for different types of secondary education. This system, which forces major decisions about future educational opportunities at the age of "eleven plus," is considered by many to be wasteful of potentially superior human resources.

It is now clear that a program for identifying talent is not envisaged as coming directly under federal control. The federal government is more likely to provide funds, on a matching basis, to those states establishing and maintaining approved programs for testing students in public or other nonprofit elementary or secondary schools. The states will remain responsible for *their own programs*; the federal government's interest is to encourage such programs by financial incentives to the states. A number of states already offer testing programs. These are of many kinds; and no effort is made for general coordination, although the directors of state-wide testing programs do meet for an annual conference.

The problems of providing sound techniques and of administering large programs cause considerable anxiety.

Unless . . . testing . . . is based upon sound principles, it can do much harm to thousands of individuals and perhaps to our very social structure.

The suggestion has been made that APA should consider making public a policy statement on testing. Such a statement, endorsed by a group of directors of state-wide testing programs, has received favorable attention in the United States Office of Education. The Educational Testing Service is preparing a manual of information for those who may be responsible for establishing new programs. It is likely that psychologists will become very much involved in such programs and that psychology will be faced with the problems of providing the technical information and services needed for their operation.

As the idea of extensive programs for identifying talents has been discussed, anxiety has developed on the part of educators that testing procedures may have significant influences on curricula: the contents of curricula—and even the way they are taught—might be couched specifically to fit the tests. The possibility has also been discussed that testing programs might have effects analogous to “selective breeding” in experimental genetics. The persons encouraged to go on in the educational system would be those whose talents are tapped by the particular tests used. This places a heavy responsibility on the validity of tests when compared with the eventual criteria of success after school. There are answers to these problems of validity, and psychologists should be prepared to present them clearly if resistance to testing programs is not to arouse understandable anxieties among professional educators.

As would be expected, psychologists, in discussing programs for the identification of talent, speak strongly of the need for research. It is urged that the research be planned as a continuing feature of any program. Three major topics of investigation are emphasized. The first topic centers around the need to discover new facts about all aspects of the process of identification and to adapt new knowledge to program requirements. The second is concerned with the advantages to be gained from systematic study of programs in operation, with particular reference to the effects of innovations on operation. The third suggests that

. . . a wide range testing program furnishing well-established norms should be conducted periodically with school children of a given school grade and corollary information

[collected] . . . to obtain analytical information on the manpower pool.

Counseling and Guidance

The federal government may provide funds, probably again on a matching basis, to states interested in strengthening the counseling and guidance services in high schools. Educational organizations (e.g., the National Education Association) appear to be giving particular emphasis to the plan. Most psychologists who have commented are favorably inclined; though there are differences of opinion concerning details, for example: There appears to be considerable opinion that such services should be limited to the secondary school. There are those who were concerned, as they were in regard to testing programs, that the federal government would control the services (there appear, however, to be no suggestions that this would be the case). Others have argued the “need for a community level guidance program.”

There is agreement that a state directed counseling and guidance service should be closely integrated with the state's testing and students records programs to ensure maximum integration and use of as much information about a student as possible. The service would be used, not only to assist the student in his educational adjustment in the school itself, but also to encourage him to develop his full educational potential by special or further training and to acquaint his parents with this potential. During a recent NEA conference on this subject, the values and attitudes of the child's family were repeatedly emphasized as decisive factors in determining how well he performed in his present courses and how far he was motivated to progress in his educational career.

Serious personnel problems are certain to arise if counselling and guidance services are increased rapidly. At present, only slightly over half of the nation's high schools even have a counselor devoting as much as half-time to the guidance of all the students in the school—an equivalent of only 11,000 full-time counselors. It has been suggested that, to meet demands for additional personnel, some training will have to be done in summer institutes (perhaps similar in organization to those supported by the National Science Foundation for special training in mathematics) and in part-time courses during the school year. Regular training programs will have to be stepped up. Much of

this training will continue to be the responsibility of colleges or departments of education, but the suggestion has been made that departments of psychology should offer to collaborate or help where possible.

Scholarships

On a priori grounds it would seem obvious that one of the ways of getting more talented students into colleges and universities would be to provide more scholarships for those needing financial assistance. The argument is that no one should be denied such an opportunity if he has superior ability. Such an argument conforms to President Eisenhower's general perception of democracy in education; and, therefore, his recommendations include

... provision of scholarships for able students needing assistance to continue their education beyond high school ... [and] expansion of graduate programs in colleges and universities, including fellowships

It is proposed that funds for these scholarships be appropriated by the federal government, but administered by participating states through a State Commission on Federal Scholarships.

Opinions among psychologists, and their colleagues in other disciplines, are far from agreement regarding the real value of such a program. Some argue that

Enlarged fellowship and scholarship opportunities are important.

... [a] science scholarship program should be established and administered as are the National Merit Scholarship Awards

While others, some of whom are very experienced in the administration of scholarship programs, seem

... reasonably sure ... a scholarship program, unless it is very large indeed, will not appreciably increase the proportion of able students going to college. ... Most of the money ... will go to students already college bound. ... Scholarship money can be used to dramatize or call attention to certain conditions and this is probably its major use.

Persons with this latter opinion emphasize the importance of other factors, e.g., motivation, family attitudes, etc., as determinants in students' decisions to continue their education. The suggestion has been made that, since there is

... very little known about the real effects of various types of scholarship programs ... [there] should be a great deal of intensive research on this.

Although this difference of opinion does exist regarding the probable effectiveness of a scholarship program, there appears to be full agreement among psychologists that any scholarship program should provide for the student's freedom of choice among the various disciplines—a point of view also held by scientists and educators generally.

It may be that federal support of this kind may have some unfortunate effects on support from other sources. During recent discussions with members of other disciplines, the statement was made that a large federal program

quite likely ... would immediately curtail resources from other than Federal funds.

Motivation of Students

One of the really basic problem areas in our present re-evaluation of education is motivation. How can talented students be interested to seek opportunities for realizing their educational potential? How can students be motivated to take full advantage of such opportunities once they are available? What can be done to stimulate them to make scientific and other intellectual contributions once their training is completed? Questions of this kind arise more frequently than almost any others.

The most frequent suggestions by psychologists are based upon the principle of reinforcement for successful achievement. A first step is to

... make clear to students what we reward and think important.

The next step is to provide adequate rewards. A program of rewards for meeting high standards could include immediate financial awards to successful students in the form of fellowships and monetary prizes. Bright young people also look to the future; it is more likely that they will choose a career in science or education if they can anticipate adequate financial rewards for future work in these fields. In the opinion of many, this last is the key consideration:

... providing sufficient economic rewards to attract more of the very top young people into careers of research and teaching.

Because careers in science and education are not now adequately rewarding in the usual monetary

sense, talented youth are attracted to other, more lucrative careers.

Social recognition is another form of motivation which could be put to fuller use. A program of prizes and honor awards might be particularly helpful, with perhaps a few top awards by the President himself. Other countries appear to use incentives of this kind more skillfully than we do. There may be certain critical periods when such awards would be particularly effective:

... I see our need as being one for prizes and fellowships in the sophomore and junior years of high school and college, when the student's educational objectives are still not clearly formulated and when there thus may be an opportunity to influence his choice of field and his level of aspiration.

The effectiveness of social recognition as an incentive at the student level is probably related to the social recognition given science and education as careers after school. In the USSR and other countries,

the longer [a student] can stay in [the educational system] the higher he is going to end up in the general social hierarchy.

This is not necessarily the case in our society.

Psychologists have pointed out that

... a most effective motivating device is personal contact with a prestige figure ...

A talented student should

... have an opportunity to do some independent work in close contact with an individual teacher ...

Several organizations, e.g., the American Association for the Advancement of Science and Science Service have provided opportunities for young people to meet with eminent scientists and teachers. Such opportunities could be provided on a larger scale. For many years, this tutorial type of relationship has been a basic feature of education at two of the world's outstanding universities—Oxford and Cambridge in England—and has been maintained because of its success, both as a motivational and a teaching device, in the development of talent. Opportunities for closer personal contacts with teachers and other prestige figures are now being provided in a few "gifted student projects" being tried experimentally in a few of our secondary schools. More such projects should be tried at both high school and college levels and

more attention given to evaluating their effectiveness.

Sore points for many students and educators are the pressures, particularly from parents, on young people to make occupational choices which do not conform to their interests or talents. Perhaps more adequate counseling and guidance of both students and their parents will give students

... maximum opportunity for selecting their own educational and vocational objectives.

A major source of student motivation resides in the educational program itself:

Many gifted children have no drive to go on because they've had the intellectual stuffing in them dampened by educational methods and curricula that are all wet from the motivational standpoint.

Psychology already has some knowledge which could be useful, but much more research is needed in the specific contexts of our educational system, particularly on the identification of motivational factors and on adequate methods of measuring them.

Educational Methods

As might have been predicted, psychologists' comments put the greatest emphasis on individual differences and the way they are recognized and treated by our present educational methods. A strong opinion is expressed that some degree of homogenous grouping is essential if all students are to have opportunities of achieving their highest educational potential. Students should be channeled into different curricula designed to prepare them for occupations commensurate with their talents and interests. Some of our failure to "educate for creativity" is a function of group instruction and mass production in education. There should be

... more logical and less rote learning; more training in the spirit and method of science and less in the cookbook memorization and techniques, facts and formulas ...

The opportunity and means should be provided for a more tolerant and objective attitude toward deviances and "idiosyncracies." Other standards should be set for the more able, the more creative students.

Attention should be given to special courses which would enable the talented students to pro-

gress more rapidly and more intensively. Some useful short-term effects might be achieved through

... refresher courses, make-up courses, and "converter" courses which would enable students to shift from one curriculum to another.

More advanced courses should be available to those students who are particularly able. "Fast-teach courses" should be provided at the secondary school level that will permit students

... to learn at a challenging pace while providing sound preparation for college.

Teacher selection and training deserve particular attention.

Repeated surveys ... indicate that many teachers offering courses are very inadequately trained ... the material covered is highly inadequate ... and often proves detrimental to further training in the field.

Opportunities for the type of training included in the National Science Foundation's program of Summer Training Institutes should be expanded. A recent evaluation of the results of these institutes

... indicates dramatically the upgrading in quality of teaching that can be produced quickly through even these short 4- to 8-week courses.

If proposals before Congress are approved, NSF will be granted funds for a very significant increase in this program.

Motivation of Teachers

Not long ago, a full-page ad in the *New York Times* made the point that America has socialized the teaching profession, essentially drafting it to the public service, whereas the USSR pays their teachers extremely well and uses capitalist incentives to motivate them. This is an example of the current concern over how the teaching profession can be made a more attractive and prestigious profession in America.

Many have expressed the opinion that there would be no shortage of teachers if salaries were more adequate, such as to compete with industry.

Pay teachers enough to give them incentive, comfort, prestige. ... Reward the good teachers more than the poorer. ... Pay them for their ability to get bright youngsters excited.

Recently, both local and national legislative bodies have been giving particular attention to this old and familiar form of increasing motivation through

financial incentives. Proposals do not, of course, cover increases in salaries for all teachers in all subjects at all levels in all the public and private institutions in the country; the concept of adding financial incentives "across the board" is a difficult concept to put into practice. It can be hoped that institutions and systems not covered will have to "get in line" in order to meet the competition. Some believe that a few really top salaries for senior and distinguished university professors would do more to entice talented young people into teaching and research and keep them there than any other action which might be taken.

Financial incentives are of great importance to motivation, particularly in a society where social recognition and financial status are so closely related. But there are other forms of motivation which might profitably receive greater emphasis than they are now getting: improvement in general working conditions, particularly for elementary and secondary school teachers; greater recognition for doing a good job;

... discussing one's plans and techniques with an outsider ("consultant") ... providing some sort of feedback on the effectiveness of one's teaching ... informing teachers of the success of their students in later, more advanced work ... better teacher training curricula ...

Educational Facilities

Very significant problems arise in providing educational facilities for handling both increases in student population and expansion of educational opportunities: problems of school construction, laboratory equipment, training aids, etc. Cost accounting, particularly at the college and university level, indicates how very expensive it is to require teaching and research staff to perform the duties of supporting personnel (clerks, typists, and assistants). Funds needed for expanding educational facilities might come, at least in part, from the federal government; indeed, some funds are already available. Opinion, however, is mixed as to the desirability of such a source of support. Some claim that experience indicates a greater willingness on the part of local support, public and private, for physical plant rather than people, students, or staff.

Research on Education

Strong opinions have been expressed on the need to step up educational research and, further, that

more psychological research should be done in as close contact with the educational system as possible. The suggestion has been made that the federal government should consider establishing a National Institute of Education, perhaps similar in organization to the National Institute of Health, and that there should be a

... program of fellowships and individual research grants on topics related to the educative process.

The idea of such an institute has been particularly prominent in the thinking of such groups of educators as the American Educational Research Association. Psychologists with special interests in education are aware of the Cooperative Research Program of the United States Office of Education—a program in which the APA has expressed official interest. The opinion has been expressed that a national institute would help significantly in putting this important venture “on firm footing.”

A number of problem areas and needs have been cited: “good experimental design” for research on educational methods, longitudinal studies of individual development, validation of the outcomes of educational innovations, experimental school programs, and social psychological and sociological research on education. To illustrate these suggestions by quoting from one comment:

... [we] need to know much more about how people learn high-level skills ... about motivation for learning and for accomplishment ... the conditions under which people become creative, both in school and on the job ... [what] college conditions and circumstances are most related to the motivation and equipment of students for advanced training ... optimum techniques for removing the academic deficiencies of students who might wish to shift to a different, more highly disciplined curriculum. ... Instrumentation for more rapid and effective learning with smaller numbers of teaching personnel.

Tax Support

Two kinds of suggestions have been made as to how certain reallocations of tax monies might help to alleviate the financial stresses involved in any program for improving educational opportunities.

One of these suggests tax exemptions for gifts and tuition paid to educational institutions. It is assumed that such exemptions would increase private and corporation gifts to colleges and universities and that it would encourage more families to send their children through courses of higher education. Opinions regarding this suggestion vary

widely from “can be the biggest boost of all” and “would favor double exemption” to “difficult to write a bill without abuses.” The possibility of allowing such exemptions is now being worked over in great detail; so far no satisfactory way has been found of writing such a bill without serious consequences to the general tax structure.

The second suggestion involves a redistribution of state and federal taxes:

... state powers of taxation be increased, with perhaps federal taxes decreased, so that the states will be in a better position to effect substantial raises in teachers salaries ...

The shift in tax monies would be in the direction of shifting more responsibility to states for financing their local educational programs with less federal assistance. Possible inequities between states with high versus low annual per capita income, however, raises problems which are better left to fiscal experts.

SCIENCE

Attitudes Toward Science

Considerable concern has been expressed over what appears to be a general popular neglect of intellectualism. To the extent that science is an intellectual pursuit, this attitude may discourage adequate support of science, affect the social prestige of the scientist with the attendant affect on recruitment of scientific personnel, limit the freedom of inquiry which is so essential to scientific development, and cause our youth

... to buck a social stereotype that is anti-academic.

Some believe that science will not get very far in this country until events

... capture the popular imagination and lead to a quite basic change in popular attitudes.

Although this is still a source of anxiety to many, there is some evidence that these attitudes are changing. One of the national television networks, for example, is reported to have banned programs which cast aspersions on the dignity of the scientist or teacher. But there still remains the question of:

How do we get people to see that ... day to day things we take for granted are simply the culmination of intellectual curiosity which started worrying about basic phenomena fifty to one hundred years before these gadgets came into existence?

There are sources of current concern over attitudes within the family of sciences. To some, the term "science" is coincident with the boundaries of the physical sciences; the biological and behavioral sciences are considered to be in another category. The distinction appears to be particularly pronounced when contributions of the physical sciences have been strikingly dramatized. It would be most unfortunate if the narrow view of science restricted the fields to which support were given and thus limited development in any of them. During these years when developments in all fields are occurring so rapidly, it is not possible to predict where the next significant "breakthrough" will appear. It is for this, among other reasons, that psychologists strongly endorse the view that research in all the sciences should be given consideration in the federal government's plans for financial support.

There is also concern over obtaining support for research planning on a long-range time perspective,

... an important ingredient of major creativity.

Psychologists strongly believe that they are seriously hampered by not being able to set up long-term research laboratories. They point out the

... organizational instability that results from certain financial policies of the Government and the effect of this instability on the kind of research that is done, both in-service and via contract.

The annual congressional review of the budget is, of course, a limiting factor in any long-range federal planning. Granting agencies have found means of stabilizing their programs with high probability that annual fluctuations in appropriations will not interfere with planning over at least a period of several years. The problem still exists, however, as far as more extensive support is concerned.

Research Support

The suggestion has been made that basic research could be given further encouragement if there were

More open grants to scientists with no strings attached.

Productivity among scientists could be stimulated and rewarded by

... outright research grants to productive scientists without the necessity of submitting a proposal or writing a report.

A few such grants are currently awarded, but the present realities of research support suggest that these procedures are not likely to be widely adopted in the near future.

During the fiscal year 1958, the federal government supported extramural research in psychology and closely related areas to the extent of some \$18,000,000. At the present time, recommendations have been made to the Congress that the government's total allocation for research be considerably increased—for example, that the National Science Foundation's research appropriation be doubled. These funds will go to the support of basic research; there is no reason to believe that basic research in psychology will not get its proper share. Financial support from private sources has and, it is hoped, will continue to encourage basic research in psychology. Such research may make its contribution to the

... estimates that in the United States, on the average, investments in research and development have repaid a dividend of from 100%–200% per year for 25 years.

"Lest we forget" at this point, one senior APA member is concerned that psychology might conceivably

... have more money than good ideas for spending it.

In the opinions of most psychologists, this hardly seems likely!

The establishment has been suggested of post-graduate "schools" combined with appropriate research facilities. Behind the suggestions is the thought that there is an important transition period between completion of formal university training and assuming independent responsibilities for research programs. The most promising of the nation's young scientists would undoubtedly benefit from experience in a laboratory directed by an outstanding senior research person and from constant contacts with other highly selected young men. This combination would also be an excellent environment for new ideas and new discoveries.

Suggestions for increasing scientific contributions would not be complete without considering the need for supporting personnel. It is a depressing fact to many research psychologists that so much of their time is spent away from their research. A significant proportion of this time is occupied with duties which could be carried on as well, or better, by specially trained personnel at lower salaries.

The question is rightfully asked: When will those responsible realize that

... provision for clerical and research assistants increases economy rather than increases cost?

Motivation of Scientists

Scientists, like other members of our society, are influenced by the values society places on human efforts and achievements. There seems to be no doubt, for example, about the beneficial effects added financial incentives could have in keeping scientists at their basic research. One suggestion is that

... federal money [be] diverted to increase salaries for scientists in shortage areas, to the extent that the Government can indeed compete salaries with industry.

The principle of differential salary increases for personnel in shortage areas is one of long standing, a perennial suggestion. A priori it makes sense in a free-enterprise society; but it can result in unfortunate consequences when applied to scientists: at best it is only a temporary solution, it may cause serious morale problems among those scientists not favored, it can have long-term effects on manpower in that students are influenced in their career choices by differences between "first-" and "second-class" sciences, and in the end it raises the question of the ultimate validity of solely financial incentives. These considerations, however, must be waived when the financial rewards to scientists are so far below that of other specialists in our society.

Suggestions regarding the use of other motivating devices have been made:

... appropriate recognition for discoveries in basic research.

... create a series of national awards each year which would lend encouragement and prestige ... to gifted recipients in the arts and sciences.

Radical suggestions are always in order: one proposes the establishment of an "academy" consisting of the perhaps 500 outstanding scientists in the country, each member receiving an annual salary of \$50,000. This is in marked contrast to our present National Academy of Sciences which has annual membership fees! Arguments for the plan are based upon the effects of such a prestige group on the recruitment and retention of scientists as well as on their productivity. Another similar sug-

gestion broadens the membership of such an academy:

... we want many creative scientists in yet undefined areas ... we might have an expanded academy ... National Academy of Arts and Sciences ...

Another proposal is that

Each scientific department of each great university should have a number of Research Professors whose primary duty is to discover new knowledge ...

Scientific and Technical Information

During recent years, it has become more and more apparent how important ready access to the world's fund of scientific information can be to the speed with which new developments in science and technology occur. The present interest in national scientific efforts have had the effect of accelerating attempts at finding solutions to the problems involved in increasing the accessibility of scientific information. Soviet successes in abstracting and disseminating technical and scientific information have been noted. The Soviet system appears to capitalize on a centrally organized government agency, the Soviet All Union Institute of Scientific and Technical Information, backed up by scientists throughout the USSR. The desirability of a comparable technical information or science documentation center in America was being discussed in various quarters before recent events brought the issue to more public attention.

As with so many other issues of current concern, opinion here varies greatly:

... seems like a proper Federal Government function.

... oppose creation of new agency ... needs could be handled by the NSF or NAS-NRC ...

These differences of opinion, however, should not be interpreted as meaning that the problems which stimulated this suggestion are not significant and urgent. It is concerning the optimal way of solving these problems that debate arises.

An example of a detailed plan for a National Technical Information Center has appeared in a draft program prepared by the Stanford Research Institute. This program proposes

... to solve the nation's technical information problem through the establishment of a national center for the collection, processing, storing, retrieval, and dissemination of scientific and technical information from both foreign and domestic sources.

The United States Department of Commerce has been fast off the mark in enlarging its Office of Technical Services to include a Foreign Technical Information Center.

The Center is to collect, evaluate and distribute valuable foreign scientific and technical literature. . . . Plans have been worked out for public distribution of information from such organizations as the National Science Foundation, Atomic Energy Commission, the Armed Services and the intelligence services.

This concern with *foreign* technical information emphasizes a second major problem: the preparation of foreign information for storing. This involves translation of foreign materials, particularly those in languages which are not readily within the repertoire of American scientists. Cover-to-cover translation of all foreign works is not now feasible; therefore, selection is necessary, and the selection must be done in some systematic way. Some steps have already been taken by the Congress to encourage translation services. The National Science Foundation and the National Institutes of Health have established programs which include some cover-to-cover translations of key scientific and technical journals, preparation of abstracts and reviews, and translations of certain longer monographs.

Much of the NSF and the NIH effort is devoted to support of translation programs undertaken by private organizations. This suggests an obvious alternative to increasing federal government services in handling scientific and technical information: increasing services already provided by private organizations or operating a centralized program through a private corporation under government contract. This is an alternative favored by many scientists, who suggest, for example, that such information services

. . . should be associated with abstracting services already available.

Recently, joint meetings of several of these services, including the APA's *Psychological Abstracts* have led to the formation of the Federation of Science Abstracting and Indexing Services.

APA has taken several other steps to improve its information services. The recent sale of back issues of our journals was aimed at getting more of the association's stock of journals from storage shelves to readers. A grant from the National Sci-

ence Foundation is helping to cut down publication lags in certain APA journals. The *Psychological Abstracts* Advisory Committee has made suggestions for handling problems arising from the ever increasing scope of the world's literature in psychology. The APA Publications Board has established a committee to give special attention to ways of making Soviet literature in psychology more readily available and usable; this committee is working closely with a National Institute of Mental Health committee concerned with similar problems. Thought is being given to the possible uses of modern methods for storing and disseminating information. In a specific instance, the APA Publications Office is in contact with and assisting where possible the trial run (in Europe) of an IBM procedure for processing abstracts.

International Exchange of Scientists

There is a strong feeling among scientists that something should be done to facilitate international exchanges of scientists. American psychologists remember with embarrassment the circumstances which made it impracticable to hold the 1954 International Congress of Psychology in the United States and which made it so difficult for foreign psychologists attending the Montreal Congress to enter the United States for visits with their American colleagues. Evaluation of scientific and technological developments in other countries is incomplete if dependent entirely upon published reports; face-to-face discussions can add significant information. The feeling has been expressed that the

U. S. needs a more consistent policy . . .

regarding such international exchanges; that the United States should

. . . lower the barriers that interfere with scientific meetings . . .

Recent East-West agreements on cultural exchanges are encouraging.

For psychology, this may be a particularly opportune time to encourage international exchanges. Recently we have had extended visits by two eminent Polish psychologists. The APA Committee on International Relations is in contact with a senior Hungarian psychologist, whose university or government probably would finance a visit to the United States were he to receive an official invita-

tion. The APA's representative to the 1957 Congress of the Interamerican Society of Psychology discussed with our Latin American colleagues ways of facilitating exchanges. The Soviet delegates at the 1957 International Congress of Psychology indicated their interest in facilitating exchanges both of information and persons between their country and ours.

Federal Department of Science

A suggestion which, if implemented, would have an important influence on the nation's scientific development is the establishment of a federal Department of Science. According to recent legislative proposals, such a department would function as an executive department of the government, would be known as the United States Department of Science and Technology or the United States Department of Science, and would be headed by a Secretary with an Under Secretary and Assistant Secretaries as determined by the President. Certain functions would be transferred from existing government departments and agencies.

There is a very definite division of opinion among psychologists on the advisability of taking such a step. The most favorable comments come from persons currently employed on government research programs. Others believe that no steps should be taken to implement this suggestion until an extremely careful study is made of the effects it would have on present government research and on research programs of the future. Some would be greatly concerned unless they could be

... assured that all safeguards necessary for keeping decentralized scientific efforts at the maximum ...

would be taken. Concern was expressed that such a department

... would have no real mission of its own but merely interfere with everyone else's business.

National Science Academy

Another specific suggestion concerns the establishment of a United States Science Academy, a teaching institution comparable to the military academies. Reactions by psychologists have been strongly unfavorable. One type of conservative view is that such a step should be taken only

... after we have done a more adequate job of equipping and staffing those institutions we now have in existence.

Other comments use the term "oppose" and still others "distressed" in speaking to the suggestion. Scientists in other fields appear to be equally concerned. As one expressed himself recently:

That such a proposal would even be made indicates the alarming state of public opinion regarding science.

DEFENSE

President Eisenhower's "safety through strength" program calls for acceleration of our defense effort. The general feeling expressed is that, as long as we must negotiate international differences on the basis of power politics, we must have "power." One aspect of such power is our national defense organization—its force-in-being and its research and development program. Ever since the early days of World War I, psychologists have contributed to these two aspects of the defense organization. Because human performance is a prime component in military systems, psychology has heavily invested its personnel, knowledge, and skills in the research activities of the Department of Defense.

The need for such research would seem to increase as weapons systems and the military establishment as a whole increase in complexity. Problems in which human behavior is a basic factor may not only increase in number but also change in kind. For example, extensive research may be needed, not only on problems of the design and use of man-machine systems and on the capabilities and limitations of human performance, but also on processes of decision making, on matters of persuasion and motivation which underlie morale and the "will" to resist military or ideological aggression, on team functioning, and on the adaptation of complex military and civilian organizations to changing demands. From such research is expected to eventuate the development of procedures which will increase the efficiency of our civilian and military establishments both in time of peace and in time of emergency.

Emphasis so far has been upon the contributions of psychological *research* to defense, but the "optimal utilization of scientific findings" is frequently given as another major problem. Reduction of time lags in putting new findings to work, communicating them to nonpsychologists, coordinating

their applications with scientists working on other aspects of defense systems, and making them generally available to persons outside the defense establishment are some of the issues which are given particular attention when technological, as compared with scientific problems, are discussed.

In addition to these general matters of contributions to defense, there are specific issues currently affecting the roles and status of psychologists in the military establishment as well as in other government agencies. The issues center around problems of

... recruitment, retention, and maximizing production of scientists engaged in government research.

Government psychologists place particular emphasis on "optimal research climate" and "stability of support for research." They suggest that significant improvements would result from:

Determination of major research programs by the director of research and his scientific associates. Limiting outside direction from non-scientists to posing the operational problems to be solved (both long and short range), without veto power on the specific programs and projects for which funds are expended. . . . Making all personnel actions, including security clearance, the responsibility of senior research scientists rather than administrative personnel. . . . Providing administrative and liaison services to the research group to facilitate communication between user agency and research group. . . . Providing funds for wide publication and dissemination of research findings and leaving the determination of related security questions to top scientific personnel in the government. . . . Research in the sciences of man should be given equal support and priority to research in the physical sciences.

They point to recent examples to indicate how instability of support can have general effects upon psychological research within the federal government and upon the attitudes of psychologists toward research careers in government agencies.

Evidence that at least some of these issues are receiving attention in the military establishment is the recent activation of three advisory groups: The Military Coordinating Group, made up of psychologists from each of the Armed Services, is concerned with coordinating research and development in psychology and the social sciences. The Advisory Panel on Psychology and the Social Sciences is charged with long-range planning. A Psychology and Social Science Division has been established in the Office of Science, Office of the Assistant Secre-

tary for Research and Engineering, Department of Defense.

SECURITY

Several years ago, representatives of a number of nations, publically asserting that wars begin in the minds of men, stated their belief in the charter of a cooperative enterprise, UNESCO, which is striving to turn the powers of service and education to the pursuits of peace. If this assumption is correct—and there is too much at stake to ignore it—psychology and related sciences have vital contributions to make to world security by advancing as rapidly as possible our knowledge of man's behavior, as an individual and as a member of various social groups. Recently, I. I. Rabi, one of President Eisenhower's chief scientific advisors, put the basic issue most forcefully:

We have to solve the problem of living together on this planet or we won't live. By we, I mean the major part of the globe, the United States, Russia, and other nations. The end of our national existence is in sight unless we solve the problem.

This central role of human behavior in international security was emphasized in recent comments from a number of psychologists:

... if things get off balance, terrific destructive power will be loosed immediately ... not merely on our side, but on both sides.

Our greatest clumsiness now ... is in our understanding and handling of human problems.

How should international discussions be conducted? ... What are the *root desires* of Russia, and of all nations, as opposed to their *demands*?

Many psychologists believe that now is the time for some careful stock taking: the time to set down clearly the knowledge we already have which could be put to work and to define areas where new information would be particularly useful in solving the grand problems of national and international security.

National Productivity

Our natural resources and high level of national productivity make it possible for us to support the economic and military "power," the educational system, scientific research, technological development, public health, and the many other features of our society which underlie our national security

as this term is currently defined. Psychologists and scientists from related disciplines have made significant contributions to increasing our national productivity. The design, control, and maintenance of even the most automatic industrial processes require human ingenuity and skill. All industrial operations involve the collaborative efforts of and communication between social groups: workers and management. Effective decision making has become an ever more important requirement. The culture patterns of industrial societies outside the work place have been demonstrated to significantly affect productivity and the introduction of technological changes. To these, and many other, aspects of our industrial productivity, psychologists believe they can continue to contribute to our national well-being.

Mental illness hospitalizes several hundred thousand citizens and prevents perhaps as many more from making their full contributions to our national productivity. In their research on methods of altering abnormal behavior patterns, psychologists are trying, in collaboration with their colleagues in related disciplines, for a major breakthrough. They are also playing a major role in applying techniques already available. There are other major social problems, e.g., mental deficiency and juvenile delinquency, in which human behavior is a basic feature and to which psychologists are turning their efforts.

If, in our wisdom, we now recognize clearly the importance of conserving our human resources, we are in the position of being able to build on what are generally considered to be the most advanced psychological sciences in the world today. Full use of our human resources can contribute most significantly to our national productivity and hence to our national security.

International Cooperation

Our nation has taken some positive steps toward the goal of international security. One such has been to aid countries abroad which are seeking to raise their standards of living and education. Programs have been established to provide direct economic assistance, to give expert advice on a wide variety of subjects, and to train foreign students and technicians in American methods. Psychologists have been directly involved in some of these programs and have assisted in evaluating the ef-

ficacy of others. Some have expressed the belief that they could make more significant contributions if opportunities to do so were provided.

Recently we have been particularly impressed with the political significance which intellectual and creative achievements may have in and of themselves. We have excellent opportunities here to demonstrate the advantages of our way of life and to influence other countries at a time when many of them are formulating the bases of their own social and political organization. Developments in psychology and other disciplines concerned with man's behavior have received more encouragement and support in the United States than in any other country in the world, developments which could be used as further evidence of our intellectual and creative achievements. Already psychologists in other countries look to us for leadership in the study of human behavior, visit us to learn of our research, and send their students to us for advanced training.

Search for Peace

Peace is not a new subject of discussion among psychologists. In 1945, the Society for the Psychological Study of Social Issues (a division of the APA) published *Human Nature and Enduring Peace*. Three times since then—in 1947, 1949, and 1957—the APA has included in the programs of its Annual Convention symposia concerned with psychological research on international understanding and roles of the psychologist in “promoting a long and enduring peace.” Psychological journals have published papers with such titles as: “Research Approaches to the Study of War and Peace,” “Role of the Psychologist in International Affairs.” This is not the occasion to review the information or suggestions given in these written and oral discussions; reference to them is sufficient to indicate that at least some psychologists are interested in the subject of peace and have some ideas as to how it might be approached.

It is interesting to speculate on how far we might get if we were to give to the search for the critical conditions and procedures for attaining international security the same support as was given the Manhattan Project on the atomic bomb. A “Manhattan Project for Peace” might bring together the best minds we have in the disciplines

concerned with human behavior, plus some interested persons from other disciplines, to:

1. Formulate the best possible statements about anticipated trends in national and international affairs during, say, the next ten years
2. Set down inferences from these statements which would serve to define basic problems that may be susceptible to solution by persons trained in research on human behavior
3. Examine present knowledge which could be applied to the solution of these problems
4. Suggest an order of priority for further research which deserves special encouragement

Such a project, similar in its general objectives to the project which has recently produced "Special Studies Report II" of the Rockefeller Brothers Fund on problems of defense, might open our eyes to possible new contributions to international security.

Perhaps the most important, and undoubtedly the most complex, approach to security lies in the development of procedures for the peaceful solution of international misunderstandings. Psychologists have been particularly interested in examining the motivations of man's actions and the conflicts which arise from incompatible motives. They have studied means by which such conflicts can be resolved in individuals and in social groups. Processes involved in individual and group decision making; the effectiveness of different forms of group organization on team functioning and adaptability; methods for measuring and altering public opinion; the characteristics of rumor, propaganda, and morale have all been examined. These aspects of human behavior—and others—are involved in negotiating intergroup misunderstandings or conflicts of motives. Systematic investigation of these phenomena is relatively new; methods are still crude in relation to what we wish they were. Nevertheless, there is knowledge which could be put to good use in aiding the peaceful solution of international differences and, hence, in increasing world security.

Two United States suggestions, which have captured greater interest and attention than any others, have been President Eisenhower's "open skies" and "atoms for peace" proposals. Both were conceived as first important steps toward international agreements on reductions in armament. The

"atoms for peace" proposal had the additional appeal of assisting nations generally in solving their needs for sources of domestic and industrial power, assistance which could result in higher standards of living. Careful examination of the needs and motives of nations might lead to other such constructive proposals.

At present we see limitations in armament as a major hope for increasing international security. Negotiations in the United Nations on arms control began in 1946, with efforts to negotiate an agreement affecting atomic energy only. In 1947, the United Nations Atomic Energy Commission approved a plan for the international control of atomic energy, but agreement was not reached on timing to put the plan into action. In 1952, a Disarmament Commission was created, but little attention was given to the atomic control problem. In 1955, President Eisenhower appointed a Special Assistant for Disarmament; United States policy was reviewed, and the "open skies" proposal followed. In the spring of 1957, the proposal was still being discussed and expanded at the London Conference. In February 1958, the President's Special Assistant resigned. Throughout this discouraging series of events run problems of human relations, decision making, evaluation of motives, and small group negotiations.

Discoveries of alternatives to power politics would provide immeasurably greater security for peoples generally than the invention of any new weapons system—and they probably would require much less drain on our national resources and wealth. Such efforts would be aimed at making the world more peaceful by eliminating the causes rather than the means of war. Eliminating the causes may involve significant changes in present patterns of human behavior:

... the traits [of our culture] that bother us are signs of a rather deep, refractory and quite unprecedented cultural crisis, and ... in the end they will yield, not to symptomatic therapy, but to changes in our life, changes in what we believe, what we do and what we value.

It would be very foolish to suggest that we are even near solutions of our social problems. But it would be equally foolish to argue that we should view them as insoluble and, therefore, should not try to find solutions. The science of psychology might well be able to make contributions.

WHAT ACTIONS CAN PSYCHOLOGISTS TAKE?

How can the concern over the national issues of education, science, defense, and security be translated into useful and proper actions? The suggestions made include actions that are considered to be the responsibilities of individual psychologists and other actions that are proper for their scientific and professional organization. Some of these actions are being taken, and others are being planned.

Information

Psychologists believe it to be a fact that their discipline already has a considerable amount of knowledge that could be put to good use. Identification of talents and counseling and guidance are obvious examples of issues on which immediate assistance can be given. Four main problems must be faced here:

1. How can information relevant to particular issues be assembled?
2. How can such information be presented in useful fashion?
3. How can it be brought to the attention of those who can put it to work, particularly to those who have a crying need for such information?
4. How can the actions indicated by the information be implemented?

The major contributions to the solution of current problems must come from individual psychologists. They should be encouraged

... to participate in local community actions aimed at informing ... in the areas of competence of psychologists.

Individuals are already being helpful in shaping legislation by testifying at national and local hearings, in advising local groups, in participating in conferences which are attempting to clarify basic issues and to suggest actions, and in making their views known on a variety of topics which fall within the psychologist's competence. Demands upon them will be particularly heavy when federal legislation is passed encouraging expansions in state programs of education; early planning to meet such demands would seem to be most desirable.

One of the procedures which has proven to be particularly valuable for evaluating issues, assembling present knowledge, and suggesting further

work to be done is the "working conference" or "institute," such as the Boulder and the Thayer Conferences. This summer there will be an APA sponsored seminar on experimental design and inference in psychology. A special committee of the APA Education and Training Board has worked out basic plans for a conference on graduate training. Conferences to bring together and examine psychological knowledge on other issues of current concern are being discussed. The suggestion has been made that we should consider organizing a

... series of regional conferences with psychologists and educators ... to communicate and to work out experimental teacher-training and classroom procedures.

The feeling has been expressed that both APA and individual psychologists should give more attention to public statements which would be helpful in

... summarizing areas in which psychologists have specialized knowledge.

Encourage sound popular writing and speaking

... make public statements of policy regarding such issues as testing.

The APA's procedure in the past has been to encourage and assist individuals (psychologists and science writers) in preparing manuscripts on a variety of topics of psychological interest. The emphasis has been upon public statements by individuals or groups of individuals rather than by the association.

Research

In addition to putting present knowledge to work, much more information on human behavior is needed. Because of the attention education is currently receiving, educational research is particularly prominent in present discussions. But research in many other areas needs encouragement and support: "social," "decision processes or policy making processes," "developmental psychology," "mental health," "how to do psychological research on international, specifically, intergovernmental issues, so as to understand, predict and control . . ." The general feeling is that APA and individual psychologists should speak for support of scientific research "across the board."

Education and Training

Education and training have been matters of major concern to APA for many years. The Education and Training Board has been one of the most active groups in the association. Members as a whole believe that this board should be encouraged to continue its good work, with particular emphasis on issues of current concern. As members of a science and profession we are concerned, not only with the training of psychologists in their various specialties, but also with education in its broadest sense. It is fully recognized that psychologists cannot "go the way alone," but they should work out ways of collaborating with specialists in other related disciplines.

Liaison

One of the most frequent suggestions for immediate APA actions has been to encourage liaison with other groups—scientific, professional, and governmental. In the past, APA has maintained re-

lations with many such groups. During the past months, such relations have increased both in frequency of contacts and in number of groups contacted. These relations have been most helpful in keeping APA informed on current issues and in providing opportunities for APA and its members to make their views known. In many instances, informal relations are adequate and, in fact, advantageous; in others, more formal arrangements are desirable, e.g., appointments of official APA representatives. There are a number of ways in which APA can evidence its interest in the activities of other groups: for example, the APA Board of Directors recently submitted to President Eisenhower nominations for vacancies on the National Science Board of the National Science Foundation.

The crucial need for maintaining adequate liaison with other groups arises, not only from the interchange of information such intercommunications can provide, but also from the realization that the current situation requires community action—the integrated effort of the entire national community.

REPORT OF TESTIMONY AT A CONGRESSIONAL HEARING

The following testimony was presented by Roger W. Russell, Executive Secretary of the APA, and by Lee J. Cronbach, Professor of Education and Psychology at the University of Illinois, to the Senate Committee on Labor and Public Welfare on February 27, 1958 during hearings on legislative proposals affecting science and education.

Mr. Chairman and Members of the Committee:

My name is Roger W. Russell. I am the Executive Secretary of the American Psychological Association, which has its headquarters in Washington at 1333 Sixteenth Street, N.W. I have spent most of my professional career in research on human behavior and in university teaching. With me today is the immediate past President of our organization, Lee J. Cronbach, Professor of Education and Psychology at the University of Illinois. Dr. Cronbach is a specialist in educational psychology and in educational and psychological testing.

As a representative of the American Psychological Association, I wish to express my appreciation for the opportunity to discuss with you problems of science and education in the United States. These are problems to which you have already given much careful thought. Among them are several with which psychologists, because of their training, research, and experience, have long been concerned. What I have to say about these particular problems will be based upon this research and experience.

The American Psychological Association is a scientific and professional organization of about 16,000 members. Membership requirements include graduate training in psychology and experience in one or more of the several areas of specialization within the general field. The association is organized in 18 divisions, each representing an area of major scientific or professional interest. Among these divisions are the following: Teaching of Psychology, Evaluation and Measurement, Educational Psychology, School Psychologists, Counseling Psychology, and Experimental Psychology. Among the boards which guide the association's activities are an Education and Training Board and a Board of Scientific Affairs. These and other groups within the association plan and encourage actions by which the association and psychologists generally can contribute to the development of science and education in the United States. As psychologists, we feel a special responsibility to make sure

that the research our profession has conducted on human ability and performance will be known to you as a guide to your decisions.

NEED FOR HIGHLY EDUCATED PERSONS

Our country has had and always will have need for leaders with creative insight into science and mathematics, into the language, traditions, and problems of other nations, and into the nature of human behavior and social institutions. Today, we are seeing scientific achievement itself employed to sway world opinion and to alter the balance in international relations. The importance of the various sciences in the formation of national policy is illustrated by the very fact that we are here trying to bring psychological findings to bear on our educational needs.

You have heard much from other witnesses regarding the vacancies in our scientific, professional, and technical forces. Psychology, like other sciences, is overwhelmed with opportunities for service and creative leadership for which we have too few qualified men. There are unfilled positions at both high and low levels in every branch of psychology, and the demands for psychologists' services and research efforts are steadily increasing.

The shortage of highly trained persons by no means indicates a shortage of talent. According to one study conducted under the auspices of the National Research Council and associated groups, the average scholastic aptitude score on the Army scale is 120 for college graduates, compared to 100 for the average of unselected men. The average for PhDs in several fields is about 130. Placing these figures against the national distribution of ability, we should expect 15% of our youth to be able to achieve average success in college and about 7% to match the average PhD in general academic aptitude. This implies that, if every person with the ability to graduate from college did so, we could come near to 660,000 college graduates per year instead of our present 270,000. And, although only 8,000 PhDs actually are awarded per

year, there appear to be 300,000 persons in each year-group who might reasonably expect to attain a PhD if they turned their efforts in that direction. Our scientific manpower problem is not a shortage of talent but a failure to attract enough students into advanced and specialized training.

THE NATURE AND IDENTIFICATION OF TALENT

One way to approach the issues which I feel competent to discuss is by beginning with a basic reality of mankind—individual differences. Individual differences in all dimensions characterize man's constitution and his behavior. This includes individual differences in those aptitudes and abilities which underlie a person's educational potential and his later occupational success. These individual differences are important from two general points of view. They are important to each citizen since he can expect that our American form of democracy will provide opportunities for him to realize the full extent of his educational potential. They are also basic to our country's well-being, which depends upon conservation of human resources in the sense of utilizing all human talents as fully as possible.

Individual differences in aptitudes and abilities are products of interactions between each individual's heredity and his environment. Although many attempts have been made to isolate and measure separately these hereditary and environmental influences, no attempt has yet been completely successful. Our tests can at best give us evidence of the individual's "*developed* abilities." We are dealing with the individual as he is. Psychological tests are nothing more than careful observations of actual performance under standard conditions.

At the present time, the nation appears to be primarily concerned with identifying and assisting those students who have the greatest aptitude for higher education, with special consideration for those with superior capacity and preparation in science, mathematics, engineering, or modern foreign languages. But this preoccupation with the especially talented should not let us ignore the fact that a healthy, vigorous society depends upon contributions from *all* its members. For every creative citizen at the frontier of research and development there are needed many citizens whose talents can support new discoveries and help to put them to work. In this sense "all of God's children are

gifted" and each should have opportunities to contribute his particular gifts to productive output. We have examined the bills from this point of view and are pleased to reach the conclusion that no provision in them threatens the opportunity of every child to receive a sound education.

Among the especially talented there are individual differences in abilities and interests which lead to choices of different professions. In this regard we are somewhat concerned that the emphasis on science and mathematics in S. 3163 and S. 3187 may have a restrictive effect. We certainly need talent in these fields and in engineering and modern foreign languages, but we also have need for talented people in medicine, law, business, and other professions. By overemphasizing certain fields now we may create shortages later. We endorse the provision in both bills which allows scholarship winners to choose any field of study.

Because of the value of aptitudes and abilities both to the individual and to the nation, it is important to identify an individual's talents as early as possible and to provide educational environments in which their full potentialities may be realized. Identifying and measuring aptitudes and abilities are problems to which psychologists and educators have devoted much effort for many years with considerable success. Early in the last century in Britain, Francis Galton shifted the emphasis in research on human behavior from characteristics of the "average" man to the measurement of individual differences in man's capabilities. In France, Alfred Binet saw that educational success varied greatly among children of the same chronological age and developed some of the first useful methods of measuring characteristics of the child which predicted with considerable accuracy his later school achievement. During the first World War, United States Army psychologists first developed testing procedures which could be applied to large numbers of men and which aided greatly in placing individuals in jobs which they could learn to perform successfully. Testing procedures are now accepted as standard features of personnel programs in the military services, industry, and educational systems.

This long background in measuring individual differences in aptitudes, abilities, and skills has included literally hundreds of careful studies which have produced convincing evidence of the advantages of testing procedures. These procedures furnish a standardized, comparable set of observations

of students who may have different teachers, who attend schools with different grading standards, and who come from widely different socioeconomic environments. Unlike grades, which may be influenced by the teacher's impression of the student's industry and conduct, test scores are direct measures of intellectual performance. Tests can identify pupils of superior potentiality who are handicapped by poor reading skill or by the fact that English is rarely spoken in their homes. Tests, if used knowledgeably, identify the larger number of students who are in the ranges of talents from which creative scientists, engineers, educators, and other high level specialists are most likely to emerge.

These are very significant advantages, but there are also limitations to test procedures which must be fully recognized in planning any identification program. There is no strong evidence that tests measure potential creativity or inventiveness. They will not pick out particular individuals who will make new discoveries and put them to work. Tests are not push button, slot machine devices where children go in one end and a guaranteed list of future Einsteins comes out the other. Test results give expectancies rather than biographies in advance.

Tests do not identify distinctive types of talent. The student who is weak in mathematics cannot succeed in certain careers, but beyond that point we have at present no secure guides to distinguish aptitude for scientific research from aptitude for the diplomatic service or military command or any other high level responsibility. The student who has ability for advanced training in one discipline has the ability for advanced training in the others, unless he has serious gaps in his preparation. This is shown by the success of large numbers of students who shift from one field of study to another during their college careers, after exposure to the broad range of culture awakens interests previously dormant.

Wisdom requires that, whenever possible, we base decisions on facts rather than opinions. Let us look for a moment at the results of some of our past experience with tests. One report finds that, among the college applicants who rank in the top 20% on a test, there will be an occasional student who fails—but for every failure there will be 32 satisfactory students including 15 who win honors. High test performance also forecasts superior ac-

complishment in professional careers. One extensive research project studied 800 men who had been identified as superior on a general mental test given at age 10. By the time these men reached the age of 40, they had published 67 books (46 of them scholarly) and more than 1,400 scientific, technical, and professional articles. They had more than 150 patents to their credit. Nearly all of these numbers are from 10 to 30 times as large as would be found in the general population.

All the evidence indicates that tests, when properly used, can provide very serviceable aids in the identification of talents and in the counseling and guidance of students having different talents in different degrees. The potential value of these aids has been recognized in both S. 3163 and S. 3187. Much will depend upon the wise selection and interpretation of tests and upon the very careful planning of testing programs.

TESTING PROGRAMS

One of the important reasons for wasted talent is that many able students do not realize their own ability. They drift through school, often with above average grades, but omit many basic subjects and never consider the professions that college opens to them. If college is not in the family tradition, or if no teacher happens to single out the student and show him a higher goal, he may leave school four to eight years before his abilities are fully trained.

The following case history is matched by hundreds of others in the files of schools which have testing and counseling programs:

The pupil entered high school with a long record of below average grades. He developed a dislike for reading and written work and avoided preparing written assignments which would reveal his inadequacies. He apparently was becoming certain that mentally he was below average. A testing program showed that his reading ability was in the lowest third of the class, but it also showed that in four different types of reasoning ability he was in the highest 5%. This test report delighted him. His teachers could see new self-confidence and a changed attitude toward his work. With this new view of himself, he began serious preparation for a career in engineering.

Teachers too need information on the potentialities of students. Teachers recognize many of the able individuals, but they overlook the very ones who have not developed scholarly interests and ambitions. Indeed, when a psychologist asked 6,000

teachers to name the "most intelligent" child in each of their classes, only 15% of them were correct in their choice, as judged by other evidence. Unless teachers recognize superior potential, they will not demand that the pupil do better than average work and will not offer him those special challenges which quicken an interest all too readily dulled by routine classwork.

In organizing a testing program, there are certain characteristics of aptitudes and abilities which must receive particular attention if we are to achieve the goal of conserving our human resources. Any program of identification of gifted students must recognize that for different persons various abilities, aptitudes, and skills appear at different ages. If each individual is to have opportunities to realize the full extent of his educational potential, identification of his talents as early as possible is desirable. Every test has some degree of inaccuracy as a measure of present ability, however, and over time abilities grow and sometimes diminish. We should certainly encourage the child who shows very early promise, but we must not dismiss as untalented the one whose ability during the elementary grades is average. Test scores should be obtained near the point where they will be used.

Major decisions about the student's program are made early in high school, when he begins to select between the more and the less academic subjects and may be placed in a special program if he shows marked ability. Sufficient change takes place before the twelfth grade to warrant a second measurement at that time. Such scores are relevant to choice of college and field of concentration for the college bound and to relatively specific vocational guidance for those going into jobs or trade schools. They will also help in identifying pupils who should try for scholarships.

Tests alone should not determine major decisions about pupils. In evaluating the individual's potentiality, the tests should be viewed in the light of the school record, teachers' opinions and observations, indications of special hobbies and achievements, and the student's family and other social environment. We commend the fact that both of the major bills before the committee provide that tests in selecting persons to receive scholarships shall be used *along with* other evidence of abilities. Qualified counselors will also make good use of information on interests and personality, which have much to do with whether the individual

will remain in an occupation after he receives his training for it.

Comparing the two bills, we note that S. 3163 has certain desirable features not made explicit in S. 3187. In S. 3163, there is a definite provision for state testing programs, the plans to be developed and passed on by the Commissioner; whereas the less definite language of S. 3187 leaves open the door to inadequate testing programs or to decisions based on no test information at all. Moreover, S. 3163 provides for testing at a minimum of two points in the students education and thus eliminates the possibility of "one-shot" testing programs which have proved in England to have serious disadvantages.

Constructing a test or a testing program is a technical matter which demands the same high degree of specialized knowledge and judgment as does the planning of a highway or a mass immunization program. Tests are not equally valid, and valid tests are suited to different purposes. The Scholarship Qualifying Test, for example, which is well designed for selecting the very cream of college entrants who receive National Merit awards, is so difficult that it does not give good estimates of ability for use in guiding the average college applicant. A test which depends heavily on reading ability gives an accurate indication of how well a student, like the pupil in the case history referred to earlier, will do if he is given no special help; but it gives no indication of the ability he could release if given the training he needs. In contrast, the reasoning test used by his school did give this indication.

MOTIVATION OF TALENTED STUDENTS

It is a basic assumption of our American democracy that opportunities will be provided for every individual to develop the full extent of his educational potentialities—if he so desires. Herein lies perhaps the most important practical problem we currently face.

Estimates vary as to how heavy is our loss in talent because students do not choose to take advantage of educational opportunities available to them. One such estimate reports that we presently fail to enroll about 40% of the top quarter of our secondary school graduates. Of those who do enroll in colleges, about 6 in every 10 leave without a degree. S. 3187 states in its preamble that the programs it proposes are

... designed to stimulate the development and to increase the number of students in science, engineering, mathematics, modern foreign languages, and other disciplines . . .

Perhaps the greatest contribution to this objective would come from solving the problem of how to develop students' interests, values, and motives so that they are more inclined toward educational achievement.

A principal difficulty appears to arise from the attitudes and values of the American public. One of the nation's most experienced experts in the search for talent recently stated:

... the academically talented pupil will succeed in scholarly fields only if he can withstand the pressures, which will be at work to keep him from becoming a person with a trained and disciplined mind.

There is some reason to believe that the dramatic scientific achievements of the past months have started a desirable change in public interest and attitudes toward science and educators, a change which should be encouraged in every way possible.

Social recognition is a form of motivation which could be put to fuller use. S. 3187 provides for congressional citation of those with outstanding scholastic achievement upon graduation from secondary school. The general proposal is an interesting experiment. Should it perhaps be extended to include the college student or perhaps timed somewhat differently? It might be that prizes and awards in the sophomore and junior years of high school and college, when the student's objectives are less clearly formulated, would have more influence on his choice of career and his level of aspiration.

Education and training beyond the first college degree is essential for the high level knowledge and skill required for creative work in most disciplines. The provisions for graduate fellowships in both S. 3163 and S. 3187 are important for several reasons. They would help to eliminate financial barriers for outstanding students who desire to continue their education at the graduate level. They could serve as rewards and incentives for outstanding undergraduate achievement. And they could encourage more talented students to continue their studies at an advanced level. One difficulty to be overcome is the competition from business and industry for bright college graduates in many fields. The graduating senior in every recent class has been besieged by recruiting agents for industry offering

jobs paying \$5,000 or more. The student who seeks advanced training must turn his back on such offers, postpone marriage and a normal standard of living, and commit himself to perhaps five years of study while earning barely enough to live on. Many dedicated students do this, but the self-sacrifice demanded of the graduate student is a deterrent not to be underestimated.

To recruit students for advanced studies we must do more than remove outright hardship. The nation must say to the student that preparing himself to the limit of his ability is his job and his duty, and we must pay him a wage commensurate with his merit. The fellowships proposed by S. 3187 (in the \$2,000-\$2,400 range) will be of appreciable value in recruiting students, but the provision of S. 3163 which allows graduate schools to adjust stipends to conditions appears more flexible. We also favor the provisions of S. 3163 whereby fellowships would be awarded by institutions of higher education. This would place greater responsibility where the graduate training actually takes place. We strongly favor the proposal that fellowships be made available in all fields of graduate study.

COUNSELING AND COUNSELOR TRAINING

Individual counseling is an essential step in encouraging the talented. The interpretation of tests to students, parents, and school staffs must be done by specially trained counselors who know the meaning and limitations of tests and who understand student motivation. Counseling is a difficult and specialized task which cannot adequately be performed even by good teachers if they lack this special training. A testing program will have only a fraction of its potential value unless it is accompanied by support for school counseling services and for the training of an adequate supply of counselors.

Serious personnel problems are certain to arise if counseling and guidance services are rapidly increased. At present, only slightly over half the nation's high schools even have a counselor devoting as much as half-time to the guidance of all the students in the school—an equivalent of only 11,000 full-time counselors. New services will require the training of new personnel in considerable numbers and in relatively short times. Because of the numbers needed, the provisions of S. 3187,

which permit any teacher or person engaged in guidance and counseling to apply for training in this specialty, are advantageous. Facilities or "institutes" for such training will have to be organized or existing facilities enlarged; therefore, it would appear desirable to put them to maximum use. The provisions of S. 3163 are more adaptable in this regard, permitting both "short-term" and "regular" training institutes.

The general reasoning behind provisions in both S. 3163 and S. 3187 for state programs of guidance and counseling is sound, and they should pay rich dividends if put into effect. The greater time perspective for such programs in S. 3187 is appealing because the establishment of sound programs will take time and full payoff may not be realized within the first few years.

SCIENCE INFORMATION SERVICE

With increases in the amount of scientific research arise problems of storing the information it provides and of retrieving this information when desired. These are serious handicaps to scientific progress in the United States. S. 3187 recognizes the need for action toward solving these problems by providing that the National Science Foundation establish a Science Information Service.

The American Psychological Association publishes twelve scientific and professional journals, among which is the world's principal journal of abstracts in psychology. Like other scientific abstracting services, we are unable to handle fully the literature in our field without increasing significantly the size of our operation or developing new methods. Recently we have joined with other groups to form a Federation of Abstracting and Indexing Services with the objective of searching for solutions to our mutual problems. As yet such solutions have not been discovered; our experience leads us to believe that, until further study of the complex problems is completed, it is premature for our association to make any recommendation regarding advisable actions. We do, however, wish to place on record our continuing interest in the problem.

RESEARCH ON EDUCATIONAL PROBLEMS

In the bills before us, the Congress is much concerned with scientific research and with education. Questions are raised as to the role of education in

advancing research. But to achieve our aims we need to ask another question: How can research advance education?

Research can serve education in the same way that it serves such fields as medicine and agriculture. It can test the effectiveness of new programs, it can establish principles which will suggest new procedures, and it can increase the effectiveness of old and new procedures. In our current concern for educating the talented, we are making changes in the educational program. We would be delinquent in our duties if we did not institute at the same time a program of evaluation to tell us whether these various programs are producing their intended results. We need research to resolve the bitter controversies which now rage regarding educational policy and method. Many of these differences stem from our lack of basic knowledge regarding learning and learners. Only when we know what results various educational programs produce, and when these results are attested by objective scientific evidence, can we settle upon the best of the alternative programs.

It is not enough to encourage teachers to put more effort into the teaching of their subjects by the traditional methods. The methods now available to schools are the product of centuries of tradition, but they are by no means proven to be the best. On the contrary, experimental investigations have shown repeatedly that many traditional methods are based in part on false principles and that new and more efficient methods can be invented to replace them.

We need research not only on educational methods. We need a great deal of research on the problems of motivations, goals, and values; we need to know far more about aptitudes and their development; we need to know more about the social forces which encourage or discourage a youth from staying in school and entering a learned profession. Such knowledge as we have already gained through research provides insights and techniques with which we can make a somewhat better use of our human resources, but this use will remain comparatively inefficient until we know far more than we do now.

Both of the bills before us recognize that research has an important part to play in education. S. 3163 provides for research in more effective methods of teaching foreign languages. S. 3187 provides for an Institute for Research and Experimen-

tation in New Educational Media. Research in both these fields has already proven its value, and further research efforts are clearly warranted. We would endorse both of these proposals if they were the best that could be adopted—but we regard them as far too restricted.

Funds are provided for research on only one specific area in each bill. In our opinion, research funds should be free to follow research opportunity. To earmark funds, as these bills do, for one or two promising areas is to attract investigators into them at the expense of the numerous other research areas whose promise has not been so clearly realized. When the National Institute of Mental Health was organized, the prominent methods for treatment of mental illness were psychotherapy and shock therapy. But within a brief ten years, shock therapy has nearly faded from the scene. The new techniques of psychopharmacology, barely above the horizon ten years ago, have shown such promise that this very Senate committee has singled them out for special support and development. In education, likewise, there are numerous promising techniques and principles which merit fully as much research attention as new educational media, and other subjects as much in need of investigation as the foreign languages.

Let me very briefly list some of the ways in which research is now opening new vistas. Serious questions have been raised about the mathematics curriculum. In high schools and the early years of college, the student rarely encounters the powerful living ideas of modern mathematics. One group of pioneers has already written a new high school mathematics course which is modern from start to finish. Other mathematicians are following the work of the Swiss psychologists Piaget and Inhelder, hoping that their new theories about how

we acquire mathematical concepts will suggest a more powerful teaching method. A different approach to mathematics is represented in the teaching machines which B. F. Skinner of Harvard is designing; if these machines succeed, they will provide each student with scientific amounts of practice and reward, freeing the teacher from the role of drillmaster and paper grader. Of even more fundamental interest is the recent proof at the University of Southern California that the aptitudes required for learning calculus depend very much on the way it is taught. This line of work may permit us to teach advanced courses far more thoroughly by using different methods for different types of students.

We suggest that the bills before us be liberalized to make funds available for any studies likely to improve education in the fundamental subjects and the utilization of talent. Serious attention should be given to the suggestion of a National Institute of Educational Research, to follow the successful pattern of the National Institutes of Health. Educational questions can be attacked by the same scientific methods that advance us in other practical fields. Nature hides her secrets well, and we dare not turn all our search parties in one direction. The creative investigator must be set free and encouraged to choose his own path. This has always paid off, and it will pay off in education.

In conclusion, we would like to express the belief that both S. 3163 and S. 3187 contain basic provisions which can contribute very significantly to the "intellectual pre-eminence of the United States" and to what this means to our national security and defense, and to the goodness of life for all men. We hope that these provisions will soon be translated into action.

A CRASH RESEARCH PROGRAM FOR PEACE

F. J. McGUIGAN

Hollins College

IN the spring of 1957, a number of internationally known news correspondents, editors, etc. visited Hollins College to conduct a program on the United Nations. Each correspondent represented a different nation as a number of important topics was discussed. When contributions from the audience were entertained, one of the questions asked of the "delegates" was: Why does the UN not support a research program that would seek to abolish international warfare?

Needless to say, the answers of the "delegates" were less than enlightening; but the question leads to additional questions. Is research appropriate to such a problem? If not, why not? If so, why do we not extensively support such an endeavor? The actual views of the representatives of the various nations in the UN might be informative. Would they respond to inquiries of this nature? The correspondents at the above conference thought no. There was obviously only one way to find out. As a result, the following letter was sent to the head representative of each of the 81 nations in the UN:

I believe that we all recognize that we are living in an age of great achievement, due mainly to the remarkable advancement of our physical sciences. At the same time it is commonplace to point out that our physical sciences have far outstripped our social and biological sciences. And yet, the main problem of our time lies within the province of the social and biological sciences, namely the likelihood that we would not survive any future international warfare. Though these non-physical sciences have been slow to develop they can now furnish us with considerable information about aggressive tendencies, their causes, and how they are expressed—though the surface is barely scratched. If we could accumulate considerably more scientific information about why people fight, we would be able to control the expression of such aggressive tendencies, given suitable conditions. The sciences, both physical and non-physical, have proven their worth in ways too numerous to cite here. With such a tremendous problem before us, why is it that we do not show our trust in the non-physical sciences to solve the problems of our very survival?

Let us suppose that the following proposal was presented for your consideration at the United Nations. The proposal would be to construct a huge research program, of a "crash" nature, whereby perhaps several billions of dollars would be allocated for the purpose of scientifically investigating the phenomenon of war. The end result of such a

program would be to obtain principles of human behavior which, if followed, would eliminate international warfare from our behavioral repertoire. Such a program would be supported on an international level by scientists of any or all countries, and would be interdisciplinary in approach. The proposal might point out that while such a sum would be large, it would be infinitesimally small compared to the annual costs of international arms construction. Furthermore, this proposal would point out that the allocation of a large sum of money could be considered as a financial investment with the potential "payoff" being the elimination of future arms expenditures.

I would greatly appreciate it if you could find the time in your busy schedule to give the above proposal some serious thought. In connection with some research that I am conducting, I would greatly appreciate receiving your best informal estimate as to how your country would vote on such a proposal. Furthermore, it would be quite illuminating to my research if you could include a statement of the possible reasons that would favor an affirmative vote on such a proposal as well as the factors that would suggest a negative vote.

RESULTS

Of the 81 letters sent out, 26 replies were received. Ten of these indicated that an answer would be forthcoming, while the remaining 16 gave an answer of some sort.¹ The 26 replies were classified into five rather crude categories: (a) negative answers to the question, (b) favorably inclined answers to the question but with some reservation, (c) favorable answers to the question, (d) definite replies to the effect that it was not possible to answer the question, or (e) an answer was deferred. It is not possible to reproduce the letters in their entirety, but pertinent quotations from those in each category might prove of interest, or even of value.

¹The respondents were representatives of: Australia, Austria, Bulgaria, Canada, Ceylon, China, Colombia, Cuba, Denmark, Finland, Haiti, India, Indonesia, Iran, Ireland, Japan, Mexico, Nepal, New Zealand, Philippines, Saudi Arabia, Spain, Thailand, United Kingdom, United States, and Yugoslavia. The views expressed are extremely informal and should in no case be taken as the official position of any nation. It should also be realized that they were offered in the spring of 1957 and therefore may have changed in the meantime.

Negative Replies

The negative character of the six replies in this category was, of course, expressed in a variety of ways.

My purely personal opinion would be that the [—] Government would not be likely to support provisions of a large sum of money from the United Nations budget for a huge research programme of the kind you have in mind. I am afraid most governments remain rather skeptical regarding the practical outcome of such an investigation and would prefer to leave such ventures to private initiative and the scientific foundations.

... serious negotiations within the framework of the United Nations have been going on of late. In my opinion at present this is the only real manner to achieve the aim.

However important such a project might be scientifically, I am a little afraid it would be difficult to persuade a government that such a project would produce practical results. I would therefore be rather doubtful whether it would be possible to persuade the [—] Government to contribute financially to a project of this sort.

The thoughtful reply from one respondent includes an implication that psychology has a right to existence:

... considering the progress of applied social sciences, such as applied psychology, et cetera . . . I would agree theoretically that your proposal would enable man to obtain principles of human behavior. However, I feel that in the phenomenon of war, it is perhaps oversimplification to say that it is merely a matter of establishing a set of principles of human behavior in the hope that they might be adhered to in order to succeed in its elimination.

This reply continues with the following comments:

There are adequate sets of principles already in existence which, *if followed*, would accomplish what all of us are seeking. All the great religions of the world, in effect, are based on the principle of brotherly love. Islam teaches the oneness of mankind and equality of men. The Ten Commandments, on which are based the dogma of Christianity, provide an excellent example of the available sets of principles. Chapter I of the UN Charter, which eighty-one sovereign States of the family of Nations have sworn to uphold, sets forth in its statement of purpose a lofty set of ideals which, *if followed*, would probably result in a comparatively utopian state of affairs.

That is why I am inclined to believe that it is rather a matter of the whole complex of men's minds, and not merely a matter of their behavior which will determine the fate of mankind. It is not merely a matter of finding and establishing another set of principles, but rather of educating the present as well as the coming generations of men toward the implementation of those many lofty principles already in existence, in order to eliminate suspicion from their hearts and to develop confidence and under-

standing amongst them. The UNESCO, in its preamble, includes, among others, the phrase, "If *war* starts in the minds of men, then it is in the minds of men that the seeds of *peace* are to be sown. . . ."

We may eliminate, through education, those elements of human behavior—of ignorance and fear—which result in the unreasoning and unreasonable established patterns of racial and religious bigotry and the consequent social, economic and political persecution which have existed in the world throughout the ages. Yes, we may do it through education. This is the path to follow in the search for a better understanding between nations and, *if followed*, may in time eliminate war from the minds of men.

The negative characteristics and the reasons in another reply were:

On the assumption that the proposal has been presented basically unamended in the United Nations and that there has been heavy pressure for its adoption (and I am bound to comment that I could not envisage such pressure), I should say that the [—] delegation would not be able to support it for two main reasons: first, because the costs would be considered as being out of all proportions to the results which could reasonably be expected from an enquiry of this nature; and second, because, as we would view it, it raises, in the United Nations context, a number of serious practical and theoretical difficulties.

First, as regards costs; the economically developed countries (one of which is [—]), although a voting minority in the United Nations, contribute the bulk of the money provided for United Nations programmes. The United States, of course, is by far the largest contributor. Considering the diversity of the financial demands made on them, within the United Nations as well as outside it, these countries, even the richest and most generous of them, are obliged to establish priorities in determining their financial support for the activities of the United Nations. A single programme which costs billions of dollars might well make it necessary for countries like [—] to reduce or curtail their contributions to programmes of technical assistance to under-developed countries and to the United Nations specialized agencies concerned with raising social, cultural and educational standards, as well as to many other high-priority undertakings whose value has been amply demonstrated over a number of years.

A decision to support the hypothetical programme of investigation into the causes of war could be taken only if there were complete certainty in advance that the ultimate outcome of the enquiry would be elimination of war and of expenditures on armaments. Without that certainty, countries at present contributing to the urgent humanitarian and economic aid programmes would, I think, be unable to justify any drastic re-arrangement of the priorities they are following at the present time.

The major difficulty, as I see it, is that there could be no assurance either that the specialists and scientists responsible for carrying out the enquiry would be able to reach agreed conclusions or that sovereign states would

be willing to act in accordance with any principles which might be generally accepted by the scientists.

In brief, I fear that the reaction of most governments, including my own, would be that the scheme was impracticable.

It could be argued that an approach based primarily on an extension into the international field of the methods of enquiry appropriate to individual or group cases would not attract general endorsement, even among specialists. Such an approach might have limited relevance in the study of the causes of international tension and national and ideological aggression, because the factors exerting a decisive influence in a limited enquiry into aggressive characteristics among individuals might be of little importance in considering aggression and belligerency among nations. There is also the point that if scientists and specialists from every major country were associated with the proposed enquiry, the effect would not be "interdisciplinary" but chaotic, because many could be expected to bring to a study as controversial as this the political, cultural and ideological predispositions which distinguish the behavior in international relations of their own governments.

In fact, it seems likely that there would be endless and inconclusive debate on the subject. At the present time, it is clear that the major countries of the world (and their political scientists) hold strongly divergent views on the causes of international tension and on the means by which it might be reduced. Some tend to stress ideology, other the existence of grave economic inequalities. In the view of some, patient and intensive negotiation on the problem of disarmament, leading to a universally applied and effectively controlled system of disarmament, would pave the way to a general political settlement and the elimination of tension. In the view of others, disarmament must be preceded by a political settlement and by the abandonment of propaganda offensive and aggressive pressure of ideological ends. Others emphasize the importance of developing the human and material resources of countries whose people, for centuries, have been a prey to poverty, under-nourishment and disease. Others lay stress on age-old enmities and racial prejudice which produce xenophobic, expansionist or irredentist national policies. These, it is felt, lie in an area of irrationality which, although not fully susceptible to scientific investigation, has traditionally played a large and harmful role in countries where education and democratic institutions are not widespread.

I have mentioned only a few of the factors which must be considered. The solution of the problems of international tension and of war, in my view, lies in the sphere of international politics. The non-physical sciences can, of course, play a valuable and useful role in an investigation of the extra-political economic causes of war, but it seems highly doubtful whether governments could be expected to give a scientific investigation primacy over the economic and political measures which must form part of any practical and lasting solution. It is considerations of this kind which would, I think, influence my delegation's position on proposals along the lines of that suggested in your letter.

From another respondent came a mildly negative reply, but a number of specific thoughts in favor of and against the proposal.

The proposal has struck me as original and novel, but I have my doubts whether it will be taken up by the United Nations for implementation. As desired by you, I am summing up the arguments for and against the proposal in the following paragraphs.

Arguments in favor of the proposal:

1. It might create a healthy diversion for all concerned from the armaments race to something really constructive and useful for purposes of the elimination of war.
2. As war is said to begin first in the minds of men, it is only appropriate that principles of human behavior should be studied and discovered with a view to eliminating war from our behavioral repertoire.
3. Such a program if launched will go a long way in educating the common man about the danger and folly of war, but the implementation of the program depends on the governments of the countries that have come to exercise in modern times an excessive overall control over the minds of men through the gigantic machineries of propaganda at their disposal.
4. It must be said in favor of such a proposal that it is based on the recognition of the basic fact that physical science has outstripped social and biological sciences and that if civilization is to be saved the utilization of the benefits of physical science has got to be conditioned by sound sociological and socio-psychological considerations.
5. Such a proposal may receive unstinted support of the smaller countries at the United Nations, but its successful implementation depends largely on the cooperation and efforts of the major powers that have considerable stakes in the armaments policy.

Arguments against the proposal:

1. The existence of hostile power blocks, armed to the teeth and mightily suspicious and distrustful of each other, strikes at the very root of the successful implementation of such a proposal. The leaders of the antagonistic power blocks will not, in all probability, be inclined at least for the present to divert national expenditure on armaments production and defense to the financing of a program for the scientific investigation of war and for the discovery of the principles of human behavioral repertoire.
2. Even the support of the scientists in all the countries for such a program is doubtful because of the over-dependence of scientists on the state even for purposes of research and experiments in various spheres of knowledge. This over-reliance on the part of the scientists, if not due to anything, is caused by the sheer cost which scientific research and experiments entail in modern times.
3. Smaller powers that have nothing to disarm and at the same time have very little to spare for expenditure on such ambitious projects can do very little about their implementation, convinced though they might be about their constructive and useful purpose. In practice it is to be noted that the outlook of the small powers on such matters is also apt to be influenced by the bigger powers and especially by the two biggest among them to a very great extent.

4. I feel the proposal might be regarded by the powers that matter as slightly too idealistic and impractical in spite of its being constructive and useful in some way.

Favorably Inclined Replies

This category includes the two replies judged to be generally favorable, but pointing out some difficulty that would prohibit such a project from being carried out.

I agree with you that such a study would be worthwhile. As you are doubtlessly aware, many independent studies have been conducted on the psychological causes of aggression, among them those by Mr. Bertrand Russell. In spite of the admittedly brilliant insights attained, however, the conclusions have generally been controversial. This might suggest that perhaps what is needed is a systematic research program such as the one you are now proposing. The financial implications, however, of your proposal might appear too gigantic for the United Nations to handle at present.

As to how such a project might be received in the United Nations if the proposal were actually introduced, I have no way of assessing possible reactions at the moment. One key objection might lie in the basic assumption behind your proposal, namely that the causes of aggression are wholly psychological. You will admit that this could generate a great deal of debate.

Another respondent, after expressing general agreement with such a proposal, says:

However, I am not sure that the United Nations is the appropriate organism for these investigations. My feeling is that we are asking the United Nations for too many programs and this organization has neither the budget, nor the possibility nor the authority to carry them out. The only thing the United Nations could do would be to recommend the governments to proceed with the investigations and in this respect perhaps something could be accomplished.

Positive Replies

Positive replies were received from three respondents.

This I would do because every human being should do the utmost to prevent the horrors and destruction of war. To vote on the contrary would mean to foster them.

... to construct a research programme for the purpose of scientifically investigating the phenomenon of war would doubtless be instrumental in throwing new light upon this problem which is of crucial importance to the future of mankind.

It is not only the official but also the humanistic duty of ... representatives to support any individual or organizational efforts ... for overcoming any tendencies that

might threaten the world peace. [He then points out that such a project might come under a UNESCO endeavor entitled, "Tensions Affecting World Understanding."]

"Can Not Evaluate" Replies

Included in the category of replies where a definite statement was made that no answer would be given were five respondents. The most that one representative would say is that: "It seems to me to be a very interesting project." After implying that the proposal's aims are praiseworthy, another representative offered a concluding statement that may be interpreted in several ways: "I wonder whether you have presented your plan to the United States Department of State and in this case, whether you have received a reply." An aide to a representative offered little more than: "... regrets that he cannot reply with your request." Or, another example:

We are constantly searching at the United Nations for a cure for war. I think we are making some progress, although we have a long way to go. Not being a scientist, I cannot evaluate your suggestion, but you can be sure that any real contributions to the search will be welcome, from whatever quarter.

"Being Considered" Replies

The general answer of the ten replies in this category was that the proposal was "interesting," "deserves serious consideration," etc. and that it is being forwarded for consideration of the various governments. The concluding sentence in one (the only one of its kind) of these replies was: "I would be grateful if you would find it possible to let me know from time to time of the progress you are making in your research work with regard to this problem."

DISCUSSION

The views expressed in the answers are interesting and thought provoking. Perhaps the major reason for not supporting such a program would be a skepticism concerning the value of its outcome. This skepticism may be justified, or it may result from a lack of understanding of science as applied to behavioral problems in a broad sense. The statement "... it is rather a matter of the whole complex of men's minds, and not merely a matter of their behavior ..." is illustrative of this point; similarly, the thought that people engaged in such

a project (scientists included) could not agree on approaches or results. While this may well be the case, the problem would not loom so large if the project were conducted as scientists *should* conduct it—for instance, there should be no disagreement about *results*. The representative would seem to be especially astute, at least from a scientist's point of view, who noted that the reason certain previous "conclusions" have been controversial points up a need for a systematic research program.

A similar potential lack of understanding of science is indicated by the requirement that such a program should *guarantee* the elimination of war. No qualified scientist can guarantee results of any particular nature on a sufficiently complex problem—there obviously must be some element of gamble. One of the comments is refreshing, if unique, in this regard, for the respondent merely requires that we throw "new light on this problem." This is in contrast to another representative's statement to the effect that a complete solution must first be guaranteed as the outcome.

One can only speculate on why returns were received from certain nations, and not from others. The reasons would seem to be too numerous to allow us to conclude a lack of interest on the part of some.

A rather tenuous attempt to categorize the results of this investigation is presented here:

The major factors militating against such a proposal would seem to be essentially two. First, too much money is required, money which, among other things, would have to be diverted from present activities (arms, humanitarian and economic projects, etc.). Five representatives expressed this reason. Second, they were skeptical regarding the outcome of such a program (it's too idealistic, impractical, the problem is not sufficiently due to psychological causes, etc.). Six representatives expressed this reason. Obviously these two factors are not independent.

In place of a scientific effort of the nature described above, three representatives said that alternative approaches were superior: to negotiate within the UN, to solve the problem through education, and the solution lies within the sphere of international politics.

The reasons favoring such a proposal were expressed as: it would create a healthy diversion from armaments races (one representative), it would educate us as to the folly of war (one), we need systematic research to solve the problem (one), and the general purpose and potential outcome of the program was valuable (three).

SUBLIMINAL STIMULATION:

AN OVERVIEW

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SELDOM has anything in psychology caused such an immediate and widespread stir as the recent claim that the presentation of certain stimuli below the level of conscious awareness can influence people's behavior in a significant way. The controversy was precipitated primarily by a commercial firm which claimed that the subliminal presentation of the words "Eat Popcorn" and "Drink Coca-Cola" fantastically stimulated the respective sales of these products among the motion picture audiences who received the stimulation. Despite the fact that detailed reports of the experiment have not been made directly available in any published form, this technique was seized upon as the newest of the "new look" promises of the application of psychology to advertising. While such claims and demonstrations will be considered in greater detail below, it is important to note here that they have given rise to a series of charges and countercharges, the effects of which have reached the United States Congress and the Federal Communications Commission (7, 117).

Rarely does a day pass without a statement in the public press relating to the Utopian promise or the 1984 threat of the technique (8, 17, 29, 37, 42, 45, 118, 132). Since the process of choosing up sides promises to continue unabated, it appears wise to provide the potential combatants with a more factual basis for arriving at their positions than presently seems available. Meanwhile, the present writers have cautiously sought to avoid aligning themselves behind either of the barricades.

Obviously, the notion that one may influence the behavior of another individual without the individual's knowing about it is a fascinating one. It is of extreme interest, not only to psychologists and advertisers, but also to politicians, psychiatrists, passionate young men, and others, whose motives would be considered more or less sacred by the larger society. Equally obvious is the need for a clarification of the issues surrounding the application of subliminal perception. This clarification must involve the assessment of available scientific

evidence, the answering of a series of technical questions, and the examination of what, if any, levels of behavior may indeed be influenced. Finally, a series of extremely complex ethical issues needs to be explored. It is the purpose of the present paper to undertake this task, in the hope of providing information upon which possible decisions involving its application may be based.

RECENT HISTORY OF THE TECHNIQUE

The custom of providing a chronological review of the literature will be violated in this paper, inasmuch as three separate threads of investigation seem worth tracing: (a) the recent demonstrations by advertisers which first aroused large-scale public interest in subliminal perception, (b) systematic research by psychologists relating directly to the influencing of behavior without the individual's awareness that he is being influenced, and (c) psychological research concerned primarily with the influence of inner states of the organism upon the threshold for conscious recognition of certain stimuli.

Recent Advertising Demonstrations

While the advertising possibilities of subliminal stimulation were recognized by Hollingworth (59) as early as 1913, the intensive work in its application to this area has been carried out within the past two years. In 1956, BBC-TV, in conjunction with one of its regular broadcasts, transmitted the message "Pirie Breaks World Record" at a speed assumed to be subliminal (85). At the conclusion of the regular program, viewers were asked to report whether they had noticed "anything unusual" about the program. While no reliable statistical data are available, it seems possible that those few viewers responding to the message possessed sufficiently low thresholds so that for them the message was supraliminal.

A demonstration by the commercial enterprise which has been most vocal in its claims for the

advertising promise of the technique consisted of projecting, during alternate periods, the words "Eat Popcorn" and "Drink Coca-Cola" during the regular presentation of a motion picture program. As a result of this stimulation, reports contend,¹ popcorn sales rose more than 50% and Coca-Cola sales 18%, as compared to a "previous period." Despite the likelihood of serious methodological and technical defects (exposure time was reported as 1/3,000 sec., far faster than any previously reported stimulation), this demonstration has been the one which has caused the most stir in both the fields of advertising and psychology. There were no reports, however, of even the most rudimentary scientific precautions, such as adequate controls, provision for replication, etc., which leaves the skeptical scientist in a poor position to make any judgment about the validity of the study.

In a later demonstration for the press, technical difficulties permitted the viewers to become consciously aware of the fact that they were being stimulated. Although described as a purposeful and prearranged part of the demonstration, it left many of the reporters present unconvinced that the technical difficulties inherent in the technique have been surmounted.

The FCC, turning its attention to the problem, has reported that one TV station (WTWO, Bangor, Maine) has experimented with the transmission of public service announcements at subliminal levels, with "negative results" (117).

The uncontrolled and unsystematic nature of the demonstrations reported above makes very difficult the task of reaching a trustworthy conclusion about the effectiveness of subliminal stimulation in advertising. Whether the technique represents a promising means of communicating with the individual at a level of his unconsciousness or whether it reflects only the hyperenthusiasm of an entrepreneurial group remain unanswered questions.

Research on Behavior Without Awareness

In the hope of providing a more substantial foundation upon which to base judgments of the validity of advertising claims for subliminal stimulation, a systematic review of relevant scientific

work was undertaken. While we believe that our review was comprehensive, we have decided not to provide an extensive critical discussion of the various studies, choosing instead to present summative statements and conclusions based upon what seems to be sufficient evidence and consensus in the literature.²

The work of experimental psychologists in subliminal stimulation dates from Suslowa (119) in 1863, as reported by Baker (5). Suslowa's experiments concerned the effect of electrical stimulation upon subjects' ability to make two-point threshold discriminations. He found that, even when the intensity of the electrical stimulation was so low that the subjects were not aware of its presence, their ability to discriminate one- from two-point stimulation was somewhat reduced.

In 1884, Peirce and Jastrow (94) were able to show that subjects could discriminate differences between weights significantly better than chance would allow, even though the differences were so small they had no confidence whatsoever in their judgments.

Numerous experimenters have relied upon this criterion of "zero confidence" to establish that discrimination of stimuli presented below the level of conscious awareness is possible. For example, Sidis (107) showed that subjects could reliably distinguish letters from numbers, even when the stimuli were presented at such a distance from them that the subjects thought they were relying on pure guesswork for their judgments.

In what was essentially a replication of Sidis' research, Stroh, Shaw, and Washburn (116) found evidence to support his conclusions. They found similar results when auditory stimuli (whispers) were presented at a distance such that the subjects were not consciously aware that they were hearing anything.

Several experiments have provided further support for Peirce and Jastrow's initial conclusions (44, 127). Baker (5) found subjects able to discriminate diagonal from vertical crossed lines, and a dot-dash from a dash-dot auditory pattern. Miller (88) presented five geometric figures at four different levels of intensity below the threshold and found that, while subjects could discriminate which

¹ The essential facts of this study have not been reported in any journal. The discussion of this experiment and the findings reported by the commercial enterprise responsible for the study is based on reports in several general news accounts appearing in the popular press (7, 8, 16, 17, etc.).

² The reader who wishes a more complete technical critique of studies in the field is referred to reviews by Adams (1), Collier (27), Coover (28), Lazarus and McCleary (76), and Miller (90).

was being presented a significant proportion of the time, their ability to discriminate was reduced as the intensity of stimulation was further reduced. More recently, a series of studies by Blackwell (11) has shown that subjects can reliably identify during which of four time periods a subliminal spot of light is presented upon a homogeneous field. Blackwell, however, stresses that reliability of discrimination decreases as the intensity of the stimulus is further lowered. Several other supporting studies are available (28, 97, 130) which show essentially the same results, namely, that even when subjects have zero confidence in their judgments, they can discriminate reliably (though not perfectly) between stimuli.

In his review, Adams (1) points out certain general weaknesses inherent in studies of this type, but agrees with the present authors that discrimination can occur under certain circumstances. However, it is interesting to note that, in nearly all studies reporting relevant data, the reliability of the subjects' judgments increases directly with the intensity of the stimuli. If a valid extrapolation can be drawn from this finding, it would be that accuracy of perception increases as the stimulation approaches a supraliminal level.

A second series of studies has involved presenting subjects with variations of the Mueller-Lyer illusion, in which the angular lines have differed, subliminally, in hue or brightness from the background. The first of these studies, reported by Dunlap in 1909 (36), gave clear evidence that the subjects were influenced in their judgments of line length, even though they could not "see" the angular lines. Several replications of this study have been carried out, and while at least three have found partial support for Dunlap's conclusions (14, 59, 86), others have failed to find the phenomenon (123). In another experiment conducted by Sidis in 1898 (107), subjects asked to fixate on a number series in the center of a card, and then asked to pick a number from this series, systematically chose that number which was written in the periphery of the card, even though they were not consciously aware of its presence. Coover (28) in 1917 showed essentially the same results by asking subjects to pick a number at random while they were fixating on a letter in the upper right portion of a card. He found that subjects tended to pick the number printed in the lower left of the card, even though they did not *usually* know it was there.

In similar experiments, Collier (27) and Perky (95) showed that subjects could be made to produce drawings, even though they were not aware that they were being influenced in their actions. While these studies are not unequivocal in their findings, nor generally rigorous in their methodology, they too seem to support the contention that behavior of a sort can be influenced by subliminal means. However, they require cautious interpretation, since the degree of the subject's attention to the stimuli seems clearly to be a factor. Further, as contrasted to those studies where the subject is actually aware in advance of at least the general nature of the stimulation, these studies reveal a somewhat less pronounced effect of subliminal stimulation upon the subject's behavior.

While the studies reported above seem to indicate that discrimination without awareness may occur, it may reasonably be asked whether stimulation below the level of conscious awareness can produce any but the most simple modifications in behavior. A series of studies (24, 26, 73, 109), beginning with Newhall and Sears in 1933 (92), have attempted to show that it is possible to condition subjects to subliminal stimuli. Newhall and Sears found it possible to establish a weak and unstable conditioned response to light presented subliminally, when the light had been previously paired with shock. Baker (6) in 1938 reported the successful conditioning of the pupillary reflex to a subliminal auditory stimulus, but later experimenters have failed to replicate his results (57, 128). In a now classic experiment, McCleary and Lazarus (79) found that nonsense syllables which had previously been associated with shock produced a greater psychogalvanic reflex when presented tachistoscopically at subliminal speeds than did nonshock syllables. Deiter (34) confirmed the McCleary and Lazarus findings and showed further that, when verbal instructions were substituted for the shock, no such differences were produced. Bach and Klein (4) have recently reported that they were able to influence subjects' judgments of whether the line drawing of a face (essentially neutral in its emotional expression) was "angry" or "happy" by projecting the appropriate words at subliminal speeds upon the drawing.

A series of related studies (58, 65, 89, 99, 105, 121, 122) have shown that, even when the subject is not aware that any cue is being given, certain responses can be learned or strengthened during

the experimental process. For example, Cohen, Kalish, Thurston, and Cohen (25) showed that, when the experimenter said "right" to any sentence which the subject started with "I" or "We," the number of such sentences increased significantly. Klein (69) was able to produce both conditioning and extinction without awareness, using the Cohen et al. technique.

Several experimenters have used subliminal or "unnoticed" reward-punishment techniques to modify subjects' responses in a variety of situations, including free or chained association tasks, performance on personality tests, and interview elicited conversation (35, 41, 50, 56, 72, 78, 93, 120, 125, 126). Typical is the work of Greenspoon (48), who reinforced the use of plural nouns by saying "mm-humm" after each plural mentioned by the subject. He found that, even though none of his subjects could verbalize the relationship between their response and his reinforcement, their use of plural nouns doubled. Sidowski (108) demonstrated essentially the same thing using a light, of which the subject was only peripherally aware, as a reinforcer for the use of plural words. Weiss (129), however, failed to find any increase in the frequency of "living things" responses, using a right-wrong reinforcement to free associations by the subjects.

This evidence suggests that subjects may either (a) "learn" certain subliminally presented stimuli or (b) make use of subliminal reinforcers either to learn or strengthen a previously learned response. Again, the critical observations of Adams (1) and the introduction of other possible explanations by Bricker and Chapanis (15) make necessary a cautious interpretation of these results.

Effects of Inner States upon Thresholds

Whatever the possibility that subliminal stimulation may significantly alter behavior, there is excellent evidence that certain inner states of the organism, as well as externally induced conditions, may significantly alter the recognition threshold of the individual. This, of course, has important implications for the susceptibility of the individual to the effects of subliminal stimulation. It is well known that physiological factors, such as fatigue, visual acuity, or satiation, may change the threshold of an individual for various kinds of stimuli.

Recent evidence has accumulated to show that, in addition to these physiological factors, certain

"psychological states," such as psychological need, value, conflict, and defense, may also significantly influence thresholds, as well as other aspects of the perceptual process. Early work in this area is reported by Sanford (102, 103) who showed that subjects who had been deprived of food were more prone to produce "food-relevant" responses to a series of ambiguous stimuli. McClelland and Atkinson (80) showed that levels of the hunger drive were systematically related to the ease with which food responses were made when no words were presented on the screen.

While a complete review of the experimental work on "perceptual defense" and "selective vigilance" would take us too far afield, it seems wise to indicate, by example, some of the inner state factors which allegedly produce variations in recognition threshold. Bruner and Postman (19, 20, 21) and Bruner and Goodman (18) were able to show that such factors as symbolic value, need, tension and tension release, and emotional selectivity were important in the perceptual process. Ansbacher (3) had earlier demonstrated that the perception of numerosity was significantly affected by the monetary value of the stimuli. Rees and Israel (101) called attention to the fact that the mental set of the organism was an important factor in the perceptual process. Beams and Thompson (9) showed that emotional factors were important determiners of the perception of the magnitude of need-relevant objects. Other studies bearing upon the issue of inner state determiners of perception are reported by Carter and Schooler (23), Cowen and Beier (31, 32), and Levine, Chein, and Murphy (77).

More specifically related to the issue of altered recognition thresholds is a study by McGinnies (82) in which he demonstrated that emotionally toned words had generally higher thresholds than neutral words. Blum (13) has shown that subjects tend to be less likely to choose conflict-relevant stimuli from a group presented at subliminal speeds than to choose neutral stimuli. Lazarus, Ericksen, and Fonda (75) have shown that personality factors are at least in part determiners of the recognition threshold for classes of auditory stimuli. Reece (100) showed that the association of shock with certain stimuli had the effect of raising the recognition threshold for those stimuli.

While many writers have contended that the variations in threshold can be accounted for more

parsimoniously than by introducing "motivational" factors such as need and value (60, 61, 111), and while the issue of the degree to which need states influence perception is still unresolved (22, 39, 40, 62, 74, 83), it is apparent that the recognition threshold is not a simple matter of intensity nor speed of presentation. Recent work by Postman and others (47, 96, 98), which has sought to illuminate the prerecognition processes operating to produce the apparent changes in threshold, does not alter the fact that individual differences in the perceptual process must be taken into account in any further work on the effects of subliminal stimulation.

UNANSWERED METHODOLOGICAL QUESTIONS

Having now concluded that, under certain conditions, the phenomenon of subliminal perception does occur, we turn our attention next to the many unanswered questions which this conclusion raises. For example, what kinds of behavior can be influenced by subliminal stimulation? What types of stimuli operate best at subthreshold intensities? Do all subliminal stimuli operate at the same "level of unconsciousness," or do different stimuli (or modes of stimulation) affect different levels of unconsciousness? What characteristics of the perceiver help determine the effectiveness of subliminal stimulation? All of these questions, as well as many others of a technological nature, will be discussed in the ensuing paragraphs.

A few words of caution concerning the word "subliminal" seem in order, however. It must be remembered that the psychological limen is a statistical concept, a fact overlooked by far too many current textbook writers. The common definition of the limen is "that stimulus value which gives a response exactly half the time" (44, p. 111). One of the difficulties involved in analyzing the many studies on subliminal perception is the fact that many experimenters have assumed that, because the stimuli which they employed were below the statistical limen for a given subject, the stimuli were therefore never consciously perceivable by the subject. This is, of course, not true. Stimuli slightly below the statistical limen might well be consciously perceivable as much as 49% of the time. Not only this, but thresholds vary from moment to moment, as well as from day to day. All this is not to deny that stimuli which are so weak that they are never consciously reportable

under any circumstances may not indeed influence behavior. We simply wish to make the point that the range of stimulus intensities which are in fact "subliminal" may be smaller than many experimenters in the past have assumed. It has been commonly assumed that the several methods of producing subliminal stimuli, i.e., reducing intensity, duration, size, or clarity, are logically and methodologically equivalent. While this may be true, it remains to be demonstrated conclusively.

Types of Behavior Influenced by Subliminal Stimulation

One of the first questions that springs to mind concerns the types of response which can be elicited with subliminal stimulation. Let us assume for the moment that the below-threshold advertisements used in commercial demonstrations were the sole cause of increased popcorn buying among the movie audiences subjected to the ads. How did this come about? Did the stimulus "Eat Popcorn" elicit an already established response in some members of the audience? Or did the frequent repetitions of the stimulus message cause a shift in attitude towards popcorn eating which eventually resulted in the purchase of popcorn at the first opportunity the audience had? Did the ads merely raise an already existing, presumably learned, but weak need for popcorn to an above the action-threshold level, or did the ads actually create a need for popcorn where no need had existed beforehand? Did members of the audience rise like automatons during the course of the movie and thus miss part of the feature in order to satisfy a sudden craving for popcorn or in order to respond to a suddenly evoked stimulus-response connection? Or did they wait until a "rest period" to do their purchasing? How many patrons bought popcorn only after they had seen the film and were heading home? How many people purchased popcorn on their way *in* to see the next movie they attended? How many of those who purchased popcorn did so for the first time in their lives, or for the first time in recent memory? What if the message presented had been "Buy Christmas Seals," which are available only in one season? How many people failed to buy popcorn at the theater, but purchased it subsequently at the local supermarket?

Unfortunately, these pertinent questions have yet to be answered. Let us tentatively accept this

demonstration that impulse buying of inexpensive items such as popcorn and Coca-Cola can be influenced by subliminal advertising, without yet knowing what the mechanism involved is. It remains to be demonstrated, however, that such ads could make a person of limited means wreck himself financially by purchasing a Cadillac merely because the ads told him to do so. Nor do we know if deep-seated, strongly emotional attitudes or long established behavior patterns can be shifted one way or another as a result of subliminal stimulation. The answers to these questions must come from further experimentation.

As we have already seen, people can make use of subthreshold stimuli in making difficult perceptual judgments in situations where they are required to call up images of various objects (95) and in situations where they are asked to "read the experimenter's mind" (88). Kennedy (68) believes that some extrasensory-perception (ESP) experimenters may have obtained positive results because the "senders" unconsciously transmitted slight auditory and visual cues to their "receivers," and offers many experimental findings to back up his belief. Kennedy's studies also point up the difficult dilemma faced by people who object to subliminal stimulation as being an immoral or illegal attempt to influence other people. All of us, apparently, are constantly attempting to influence the people around us by means of sounds and movements we are unconscious of making. Correspondingly, all of us make some unconscious use of the cues presented to us by the people around us.

It also seems fairly clear that learning can take place when the stimuli to which the organism must respond are presented subliminally. Hankin (51) learned to predict changes in the flight of birds by utilizing wing-tip adjustments which were too slight to be consciously (reportably) noticeable. As we stated previously, Baker (6) obtained a conditioned pupillary response to subliminal auditory stimuli, although other investigators failed to replicate his findings. Miller (89) had subjects look at a mirror while trying to guess geometrical forms in an ESP-type experiment. Stimuli far below the statistical limen were projected on a mirror from behind. When the subjects were rewarded by praise for correct guesses and punished by electric shock for wrong guesses, learning took place. It is interesting to note that neither punishment alone nor reward alone was sufficient to produce learning.

Whether different types of learning than those reported above can take place using subliminal stimulation, and indeed how broad a range of human behavior can be influenced in any way whatsoever by subliminal stimulation, are questions which remain unanswered.

Levels of Unconsciousness Affected by Subliminal Stimulation³

We must now differentiate between stimuli which a subject cannot bring to awareness under any conditions (completely subliminal stimuli) and those stimuli of which he is merely not aware at the moment but could be made aware of should his set be changed. At any given moment, a vast conflux of stimuli impinges upon a subject's receptors. Few of the sensations arising from this stimulation ever enter the focus of attention. As Dalenbach was fond of reminding his Freshman classes: "Until I mentioned it, you were quite unaware that your shoes are full of feet." A great many experimenters have demonstrated that subjects could make use of stimuli well above the threshold of awareness but which could not be consciously reported on. Thus in one phase of her experiment, Perky (95) raised the intensity of the visual stimuli she was using to such a level that other psychologists who had not participated in the study apparently refused to believe that the subjects had not been aware of the stimuli. Perky's subjects, however, operating under a set to call up "images" of the stimuli presented, did not notice even relatively intense stimuli. Correspondingly, Newhall and Dodge (91) presented visual stimuli first at below-threshold intensities, then increased the intensities so slowly that the subjects were not aware of them even when the stimuli were well above threshold. When the stimuli were turned off suddenly, however, the subjects experienced afterimages. Thus certain stimuli may be well above threshold and yet be "subliminal" in the sense that they cannot be reported on under certain experimental conditions.

There are other levels of "unconsciousness" which are deserving of our attention, however. Much work has been done at the animal level in which conditioning has been attempted upon animals with various parts of the brain removed (33,

³ For an excellent review of the many meanings of the word "unconsciousness," readers are referred to Miller's book of the same name (90).

43). The same is true of animals under various types of anesthesia (106, 115). Miller, in summarizing the experimental data dealing with conditioning and consciousness, concludes:

(a) That conditioning can take place in other parts of the nervous system than the cortex—even in the spinal cord;

(b) That, if conditioned responses are evidences of consciousness, then consciousness is not mediated solely by the cortex;

(c) That it may be possible to develop conditioning . . . at more than one level of the nervous system at the same time;

(d) And that . . . animals are conditionable even when anesthetized (90, p. 100).

The nervous system has many levels of anatomical integration. Should we be surprised to discover that incoming stimuli may have an effect on a lower level and not on a higher and that under certain conditions this effect can later be demonstrated in terms of behavioral changes? We shall not be able to speak clearly of the effects of subliminal stimulation upon the various "levels of unconsciousness" until we have some better method of specifying exactly what these levels are and by what parts of the nervous system they are mediated. Experimentation is badly needed in this area.

Technological Problems Involved in Stimulating Subjects Subliminally

The paucity of data presented by those dealing with subliminal perception on a commercial basis, as well as the equivocal nature of their results, suggests that there are many technological problems yet to be solved by these and other investigators. For example, during a two-hour movie (or a one-hour television show), how many times should the stimulus be repeated to make sure that the "message" gets across to the largest possible percentage of the audience? Should the stimulus be repeated every second, every five seconds, only once a minute? Is the effect cumulative, or is one presentation really enough? Is there a satiation effect, such that the audience becomes "unconsciously tired" of the stimulation, and "unconsciously blocks" the incoming subliminal sensations? Should the stimuli be presented "between frames" of the movie (that is, when the shutter of the film projector is closed and the screen momentarily blank as it is 24 times each second), or should the message be presented only when the

screen already has a picture on it? How close to the threshold (statistical or otherwise) should the stimuli be? How many words long can the message be? If the message must be short, could successive stimulations present sequential parts of a longer advertisement? How much of the screen should the stimuli fill? Should the stimuli be presented only during "happier" moments in the film, in order to gain positive affect? Does any affect transfer at all from the film to the ad? Should one use pictures, or are words best? Must the words be familiar ones? And what about subliminal auditory, cutaneous, and olfactory stimulation?

As we have stated before, there has been so much talk and so little experimentation, and much of what experimentation has been done is so inadequately reported, that we can merely hazard guesses based on related but perhaps not always applicable studies.

To begin with, we can state with some assurance that, the closer to the threshold of awareness the stimuli are, the more effect they are likely to have. Study after study has reported increased effectiveness with increased intensity of stimulation (5, 14, 88, 97, 104). The main difficulty seems to be that thresholds vary so much from subject to subject (112), and from day to day (114), that what is subliminal but effective for one person is likely to be subliminal but ineffective for a second, and supraliminal for a third. As is generally the case, anyone who wishes to use the technique of subliminal stimulation must first experiment upon the specific group of people whom he wishes to influence before he can decide what intensity levels will be most efficacious.

Somewhat the same conclusion holds for the question of how many times the stimuli should be presented. While under some conditions subliminal stimuli which did not influence behavior when presented only once seemed to "summate" when presented many times (10, 66), Bricker and Chapanis (15) found that one presentation of a stimulus slightly below the (statistical) limen was enough to increase the likelihood of its being recognized on subsequent trials. We interpret this to mean that too many presentations may well raise the "subliminal" stimuli above the limen of awareness if the stimuli themselves are not carefully chosen.

As for the physical properties of the message itself, we can but guess what the relevant issues are.

Both verbal and pictorial presentations apparently are effective in the visual modality, but no one has tested the relative effectiveness of these two types of stimulation. Quite possibly subsequent experimentation will show that words are best for some situations (such as direct commands), while pictures are best for others.⁴ It can be stated unequivocally, however, that advertisers should look to their basic English when writing their subliminal commercials. Several studies have shown that, the more familiar a subject is with the stimulus he is to perceive, the more readily he perceives it (22, 54, 63, 110). We interpret these studies to mean that unfamiliar stimuli may be ineffective when presented subliminally, even though familiar messages may "get through."

The exact length the message should be, its composition, and the background in which it should be presented are variables upon which no work has been done and about which no conclusions can presently be drawn. Suffice it to say, however, that a message which would be short enough to be perceived by one person might be too long for another person to perceive under any conditions.

Which modalities are most useful for subliminal stimulation? While most of the work has been done on the visual modality, Vanderplas and Blake (124) and Kurland (71) have found subthreshold auditory stimuli to be effective, and earlier in this paper we have reported similar studies with cutaneous stimulation. Advertisers who wish to "sneak up on" their patrons by presenting subliminal stimuli in one modality while the patrons are attending to supraliminal stimuli from another modality are probably doomed to failure, however. Collier (27) presented subliminal geometric forms simultaneously to both the visual and the cutaneous modalities and found little, if any, lowering of thresholds. Correspondingly, it should be remembered that Hernandez-Peon et al. (55) found that some part of the nervous system acts as a kind of gating mechanism, and when an organism is attending strongly to one modality, the other modalities are probably "shut off" to most incoming stimuli.

Even if experimenters succeed in finding answers to many of the questions raised above concerning the physical characteristics of the stimuli to be em-

ployed, it is quite probable that they will have succeeded in discovering the source of only a small part of the variance operant in subliminal perception. For, as always, the major source of variance will come from the perceiver himself.

Characteristics of the Perceiver which Affect Subliminal Perception

The following section of this paper might well be considered a plea for the recognition that individual differences exist and that they must be taken into account by anyone who wishes to deal with individuals. We know next to nothing about the relationships between such factors as age, sex, social class, etc. and subliminal perception. Perhaps only one study is relevant: Perky (95) found that children were as much influenced by subthreshold visual stimulation as were naive adults. It is quite likely that many differences in the perception of subliminal stimuli do exist between individuals of differing classes, ages, and sexes. As always, only experimentation can determine what these differences are.

We do have some idea, however, of how what might be called "personality factors" influence subliminal perception. First and foremost, there seems little doubt but that a high need state affects perception. Gilchrist and Nesberg (46) found that, the greater the need state, the more their subjects tended to overestimate the brightness of objects relevant to that need. It should be noted that they were dealing with difference limens, not absolute limens, but other studies to be quoted later show the same effect for absolute limens. It should be noted also that Gilchrist and Nesberg apparently overlooked evidence in their own data that a strong need affects judgments of non-need-related objects in the same direction (but not as much) as it does need-related objects. Wispe and Drambarean, dealing with visual duration thresholds, concluded that "need-related words were recognized more rapidly as need increased" (131, p. 31). McClelland and Lieberman (81) found that subjects with high need achievement scores had lower visual thresholds for "success" words than did subjects not scoring as high on need achievement. Do all of these findings mean that subliminal ads will work only when some fairly strong need (of any kind) is present in the viewers? Only experimentation can answer this question.

What about abnormalities of personality? What

⁴ Perhaps much of the work on sensory preconditioning is applicable here. When Ellson (38) presented his subjects with both a light and a buzzer for many trials, then presented the light alone, subjects "heard" the buzzer too.

effect do they have? Kurland (71) tested auditory recognition thresholds using emotional and neutral words. He found that hospitalized neurotics perceived the emotional words at significantly lower thresholds than did a group of normal subjects. Does this mean that neurotics are more likely to respond to low-intensity subliminal commands than normals? Should advertisers take a "neurotic inventory" of their audiences?

A more pertinent problem is posed by the findings of Krech and Calvin (70). Using a Wechsler Vocabulary Score of 30.5 as their cutting point, they found that almost all college students above this score showed better visual discriminations of patterns presented at close to liminal values than did almost all students scoring below the cutting point. Does this mean that the higher the IQ, the better the subliminal perception? What is the relationship between the value of the absolute limen and intelligence? Will advertisers have to present their messages at such high intensities (in order that the "average man" might perceive the message) that the more intelligent members of the audience will be consciously aware of the advertising?

One further fascinating problem is posed by Huntley's work (64). He surreptitiously obtained photographs of the hands and profiles of his subjects, as well as handwriting samples and recordings of their voices. Six months later each subject was presented with the whole series of samples, among which were his own. Each subject was asked to make preference ratings of the samples. Huntley reports evidence of a significant tendency for subjects to prefer their own forms of expression above all others, even though in most cases they were totally unaware that the samples were their own and even though many subjects were unable to identify their own samples when told they were included in the series. If an advertiser is making a direct appeal to one specific individual, it would seem then that he should make use of the photographs and recordings of that individual's behavior as the subliminal stimuli. If an advertiser is making an appeal to a more general audience, however, it might be that he would find the use of pictures and recordings of Hollywood stars, etc., more efficacious than mere line drawings, printed messages, and unknown voices.

Nor can the advertiser afford to overlook the effects of set and attention. Miller (88), Perky

(95), and Blake and Vanderplas (12), among others, discovered that giving the subject the proper set lowered the recognition threshold greatly. In fact, in many cases the stimulus intensity which was subliminal but effective for sophisticated subjects was far too subliminal to have much, if any, effect upon naive subjects. Thus advertisers might do well to tell their audiences that subliminal messages were being presented to them, in order to bring all members of that audience closer to a uniform threshold. Does this not, however, vitiate some of the effect of subliminal advertising?

As for attentional effects, we have presented evidence earlier (46) that strong needs seem to have an "alerting" effect upon the organism, lowering recognition thresholds for *all* stimuli, not just need-related stimuli. In addition to this, two studies by Hartmann (52, 53), as well as two by Spencer (113, 114), lead us to the belief that subliminal stimuli might best be presented when either the television or movie screen was blank of other pictures. Perhaps, then, subliminal commercials in movie houses should be shown between features; while on television the commercials should consist of an appropriate period of apparent "visual silence," during which the audience would not be aware of the subliminal stimulation presented, but might react to it later.

One fact emerges from all of the above. Anyone who wishes to utilize subliminal stimulation for commercial or other purposes can be likened to a stranger entering into a misty, confused countryside where there are but few landmarks. Before this technique is used in the market place, if it is to be used at all, a tremendous amount of research should be done, and by competent experimenters.

THE ETHICS OF SUBLIMINAL INFLUENCE

From its beginnings as a purely academic offshoot of philosophy, psychology has, with ever increasing momentum, grown in the public perception as a practical and applied discipline. As psychologists were called upon to communicate and interpret their insights and research findings to lay persons, it was necessary to make decisions about what constituted proper professional behavior, since it was evident that the misuse of such information would reflect directly on the community of psychologists. As a growing number of our research efforts are viewed as useful to society, the problem of effective and honest communication

becomes magnified, although its essential nature does not change. Recently, to our dismay, the announcement of a commercial application of long established psychological principles has assumed nightmarish qualities, and we find ourselves unwillingly cast in the role of invaders of personal privacy and enemies of society. A kind of guilt by association seems to be occurring, and, as future incidents of this kind will, it threatens to undermine the public relations we have built with years of caution and concern for the public welfare. The highly emotional public reaction to the "discovery" of subliminal perception should serve as an object lesson to our profession, for in the bright glare of publicity we can see urgent ethical issues as well as an omen of things to come. When the theoretical notion $E=MC^2$ became the applied reality of an atom bomb, the community of physicists became deeply concerned with social as well as scientific responsibility. Judging from the intensity of the public alarm when confronted with a bare minimum of fact about this subliminal social atom, there exists a clear need for psychologists to examine the ethical problems that are a part of this era of the application of their findings.

The vehemence of the reaction to the proposed use of a device to project subliminal, or from the public's point of view "hidden," messages to viewers indicates that the proposal touches a sensitive area. One of the basic contributors to this reaction seems to be the feeling that a technique which avowedly tampers with the psychological status of the individual ought to be under the regulation or control of a trusted scientific group. As a professional group, psychologists would fit this description, for in the *Ethical Standards of Psychologists* (2) there is a clear statement of their motives and relationship to society:

Principle 1.12-1 The psychologist's ultimate allegiance is to society, and his professional behavior should demonstrate an awareness of his social responsibilities. The welfare of the profession and of the individual psychologist are clearly subordinate to the welfare of the public. . . .

Both this statement and the long record of responsible behavior of the members of the profession would certainly seem to be sufficient to reduce any anxiety the public might have over the possible unscrupulous use of this or any other device. It is precisely the fact that the public is aware that decisions about the use of subliminal perception devices rest not with psychologists but with commer-

cial agencies that may be distressing to the public. The aura of open-for-business flamboyance and the sketchily presented percentages in the first public announcement tended to reinforce existing apprehensions rather than allay them.

Although subliminal perception happens now to be the focus of a great deal of reaction, it is merely the most recent in a succession of perturbing events to which the public has been exposed. It has become the focus of, and is likely to become the whipping boy for, a host of techniques which now occupy the twilight zone of infringement of personal psychological freedom. It must be remembered that to the lay person the notion of an unconscious part of the "mind" is eerie, vague, and more than a little mysterious. Unable fully to comprehend the systematic and theoretical aspects of such a concept, he must be content with overly popularized and dramatic versions of it. In every form of mass media the American public has been exposed to convincing images of the bearded hypnotist (with piercing eye) who achieves his nefarious ends by controlling the unconscious of his victim. It has been treated to the spectacle of the seeming reincarnation of Bridey Murphy out of the unconscious of an American housewife and, in *Three Faces of Eve*, to complex multiple personalities hidden in the psychic recesses of a single individual. With such uncanny and disturbing images as an emotional backdrop, the appearance of *The Hidden Persuaders* on the best seller lists formed the indelible impression of the exploitation of the unconscious for purposes of profit and personal gain. In combination, this growth of emotionally charged attitudes toward the unconscious and the suspicions about commercial morality came to be a potentially explosive set of tensions which was triggered off by the first commercial use of subliminal techniques.

What is to be the psychologist's position in regard to future developments with subliminal perception? The apparent discrepancy between the claims being made for the technique and the available research evidence suggests a need for considerable scientific caution as well as extensive investigation. The responsibility of psychologists in this instance is clearly indicated in the code of ethics:

Principle 2.12-1 The psychologist should refuse to suggest, support, or condone unwarranted assumptions, invalid applications, or unjustified conclusions in the use of psychological instruments or techniques.

The flurry of claim and opinion about the effectiveness of subliminal methods seems to be based more on enthusiasm than controlled scientific experimentation, and it is here that psychology can be of service. Until acceptable scientific answers are forthcoming, we believe psychologists should guard against a premature commitment which might jeopardize public respect for them. The course of scientific history is strewn with the desiccated remains of projects pursued with more vigor than wisdom.

Scientific caution is essential, but it falls short of meeting the ethical issue raised by the nature of subliminal perception itself. The most strident public objections have been directed toward the possibility that suggestions or attempts to influence or persuade may be administered without the knowledge or consent of the audience. Assurances that widespread adoption of this technique would provide increased enjoyment through the elimination of commercial intrusions, or that the users will establish an ethical control over the content of the messages presented, can only fail to be convincing in light of past experience. The suggestion that the public can be taught means of detecting when it is being exposed to a planned subliminal stimulation is far from reassuring since such a suggestion implies that the ability to defend oneself warrants being attacked. A captive audience is not a happy audience, and even the plan to inform the viewers in advance concerning the details of what is to be presented subliminally may not prevent the public from reacting to this technique as a demand that it surrender an additional degree of personal freedom. Fresh from similar encounters, the public may not allow this freedom to be wrested from it.

Finally, the argument that a great deal of our normal perception occurs on the fringe of conscious awareness and that subliminal events are no more effective than weak conscious stimuli rests on opinion and not fact. This seems particularly dangerous clinical ground on which to tread since the effect, on behavior, of stimuli which may possibly be inserted directly into the unconscious has yet to be explored. Assurances that this technique can only "remind" a person of something he already knows or "support" a set of urges already in existence but cannot establish a completely new set of urges or needs are reckless assertions having no evidence to support them. So it seems that the

aspect of subliminal projection which is marked by the greatest potential risk to the individual's emotional equilibrium is the aspect about which the least is scientifically known.

The psychologist's ethical quandary, then, stems directly from the inescapable implication of deviousness in the use of such a technique. The appropriate guidelines for conduct are provided in this ethical statement:

Principle 2.62-2 It is unethical to employ psychological techniques for devious purposes, for entertainment, or for other reasons not consonant with the best interests of a client or with the development of psychology as a science.

It is obvious that "devious purposes" and "the best interests . . . of psychology as a science" are not self-defining terms and must be interpreted by the individual psychologist in light of the circumstances of each situation. It is a trying and complex decision to make. If in his mature judgment the intended uses of the principles of subliminal perception do not meet acceptable ethical standards, the psychologist is obligated to disassociate himself from the endeavor and to labor in behalf of the public welfare to which he owes his first allegiance. In this respect, the responsibility of the social scientist must always be that of watchdog over his own actions as well as the actions of those to whom he lends his professional support.

The furor which promises to accompany the further application of a variety of devices involving subliminal perception is certain to embroil psychology in a dispute not of its own choosing. The indiscriminate and uncontrolled application of psychological principles is increasing at a fearsome rate in the form of motivation research, propaganda, public relations, and a host of other "useful" practices based on the work of psychologists. In a very real sense this era of applied psychology will be a test of the workability of the psychologist's code of ethics and promises to stimulate the profession to give further consideration to its responsibility for assisting society to use its findings wisely.

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Comment

A Question of Values

Having read K. E. Clark's *America's Psychologists* and the recent statement by Division 12 of the new requirement for fellowship status of "a significant contribution," we were impressed with the fact that either intentionally or unintentionally values are playing an increasingly significant role in determining the criteria which will be selected as appropriate for assessing the status of professional psychologists.

It is interesting to note in this connection that in Clark's book much emphasis is given to research publication as a means of differentiating "significant contributors" from their ostensibly less productive colleagues. It is apparent that discrimination on this basis has the advantages of objectivity and ease of determination. There are certainly other equally important criteria, however difficult to measure, which the clinical psychologist might suggest: such as skill in diagnosis and therapy, number of patients benefited through treatment, direct and indirect contributions to the solution of mental hygiene problems in the community. The teacher of psychology would, we think, have still other pertinent criteria which he might consider of major import: such as the number of students toward whose education he has substantially contributed, the number of students he has motivated to pursue further study in psychology, and contributions to mental health through informal counseling.

The point we are trying to make is that a value system to a large extent determines what functions or productions are to be considered worthy and thus tends to sustain them. It should be remembered that Clark's book addresses itself, not only to research psychologists, but to the entire profession as well as to any other interested intelligent reader. Surely some consideration could have been given to other professional endeavors which are of significance to a large number of psychologists. It is recognized that Clark and his co-workers cannot be criticized for delimiting their area of investigation; but, if the book is intended to present information about all of America's psychologists, then errors of omission can loom as large as errors of commission. Clark himself reports that about three times as many psychologists are members of Division 12 than any other division. Might not some valuable hypotheses, amenable to research investigation, have been forthcoming from this large group as well as from the smaller number of psychology teachers? And what about problems that appear significant for which no appropriate methodology currently exists? These oversights or neglect trouble us. We see it as a sign of things to

come; perhaps, the structure of the APA may be seriously threatened.

Even Division 12 seems to be suffering from this same (unrecognized?) conflict. New fellows will have to have made an "outstanding contribution" to psychology. Will these contributions be limited to those which can be reliably and validly investigated, leaving the important service and teaching functions to be relegated to secondary importance because of the difficulty in establishing valid criteria for their assessment? Or is it to be a long list of (significant?) publications that will be the *summum bonum*? Was it W. S. Maugham in his *Summing Up* who said that writing a book was inherently no more valuable an activity than plowing a field? The value lies in the eyes of the doer (and perhaps in the contribution to others).

We might add that this question of values pervades many diverse areas in psychology, including psychometric assessment and teaching. In "Comments on Meehl and Rosen's Paper" (*Psychol. Bull.*, 1956, 53, 335-337) by S. Karson and S. B. Sells, essentially the same problem was raised. Certain remarks by S. L. Pressey in "Teaching in the Ivory Tower, with Rarely a Step Outside" (*Psychol. Bull.*, 1955, 52, 343-344) are especially relevant. Although his plea is for a wider range of experiment in teaching evaluation studies, his words (p. 344) are noteworthy:

Climb higher in the ivory tower! Why not instead come down and open the door, watch what students do outside class, see what psychologists are doing in the wide world, and even venture off campus occasionally, to mix with the folks on Main Street.

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A Reply

The comments of Karson, Baler, and Carroll suggest that the planning of the program of research reported in *America's Psychologists* intentionally or unintentionally was influenced by value judgments. What they mean to say, obviously, is that they believe the wrong values were assigned, especially in the study of factors influencing an individual psychologist's research contributions to psychology. I gather that Karson, Baler, and Carroll would rather have had us study the contribution of individual psychologists to the solution of individual and society problems. I would like to see somebody make such a study; I do not believe *America's Psychologists* should be criticized for having done

a different type of study than this, nor should it be concluded that we avoided use of clinical criteria simply because they were too difficult to assess.

The emphasis given to research publication, to which Karson, Baler, and Carroll object, occurred in our study of the way in which significant contributors differed from their less productive colleagues. Attention to publication was essential, we felt, since any contribution to science necessarily involves communication with one's fellows about results. The service a therapist gives to his client may be a great contribution to the client, but it is not communicated to other psychologists. Likewise, the therapist may gain great skill in his work and become an exceedingly capable person; but, unless he has some method, either in the training of others or through his writing, to convey what he has learned to his colleagues, he has not made a contribution to psychology. Our study included in the significant contributor group a substantial number of clinical psychologists. These persons might have been nominated either because of their writing or because of the substantial training programs they directed for clinical psychologists, but not solely because they were excellent therapists. Note our directions to raters:

One of the studies being conducted under Project B is an investigation of factors influencing the productivity of research psychologists. Part of this study involves the development of a small sample of persons considered by their colleagues to have made significant research contributions in psychology, either through their own original work, or through their part in training research workers, this sample to be drawn from a larger roster of persons who have become "visible" to their colleagues through substantial contributions to the research literature. . . .

You are asked to nominate those persons whom you consider to have made the most significant contributions to psychology as a science, either through scientific work of their own, or through their work in the training of research psychologists.

America's Psychologists did give consideration to other professional endeavors. One chapter deals with the comparative characteristics of clinical psychologists and of psychologists in other areas of specialization. Another includes a survey of private practice in clinical psychology in Los Angeles. Both of these studies involve no evaluation of the individual clinician, but still provide useful insights into the nature of contributions being made by these persons.

Of course, we were dealing with values in making decisions about the way to proceed in the study of American psychology. Our responsibility was to recognize what values we held and to make them explicit in our account. What these values were is revealed to any careful reader through the detailed procedures employed in our study. In this respect, our study is no different from any other experimental investigation. While we were not willing to stop with a study that directed its attention only toward the characteristics of research psychologists, we did feel that they deserved primary attention, since the field of psychology can grow and develop only with a continuing increment to knowledge. Many clinical psychologists do not make contributions to science as science is normally defined; that they do make contributions is recognized by all.

I think we need to recognize that all of American psychology is today perplexed about the relative values to assign to research and to service in our growing field. Karson, Baler, and Carroll protest that decisions are being made about the desired characteristics of a clinical psychologist on traditional bases without enough attention being given to changing conditions and new roles played by clinical psychologists. For this position I think they can find full and unqualified support in *America's Psychologists*.

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Psychology in Action

CLINICAL PSYCHOLOGY SPECIALIST TRAINING IN THE ARMY

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IN recent years, the problem of training the psychological worker who does not hold the doctorate has received considerable attention in the pages of the *American Psychologist* (3, 5). Owing to a shortage of clinicians with the PhD, the Army has utilized specialists, possessing limited but useful technical skills in clinical psychology, who work under the supervision of fully qualified psychologists. This paper is a report on the program conducted by the Army to train these specialists. It is offered as a contribution to the general discussion of subprofessional training.

The clinical psychology specialist course is part of the advanced training provided by the Army Medical Service at the Army Medical Service School.² The course was first offered in 1948 and has continued to the present. Approximately 20-25 enlisted students are selected for each class. The formal prerequisites for the course are a GT score of 100 on the Army Classification Battery (GT scores are comparable to a general intelligence measure and are reported in terms of Army standard scores with *M* of 100 and *SD* of 20), a high school diploma or equivalent, and no history of emotional instability.

The Military Occupational Specialty (MOS) for the clinical psychology specialist (2) specifies that he:

Must know and be able to utilize basic principles governing human behavior, especially as they are applicable to neuropsychiatric patients; must know the rationale underlying, and be able to administer and score, objective-type psychodiagnostic instruments utilized in the evaluation of behavior; must be able to establish and maintain rapport with patients and be able to make useful observations of behavior during both interviews and examinations; must be able to abstract pertinent data from appropriate records such as medical, social, psychiatric histories, service, and other official records; must be able to prepare clear, concise and objective reports.

Since only eight weeks are allotted for training, the curriculum is necessarily task oriented. As described in a recent report on Army clinical psychology (4), specialists are trained to relieve the Army clinical psychologist of many routine testing procedures, but they

are not expected to choose the test battery, coordinate and interpret findings, or write formal professional reports. The number of hours, sequence, and content of each major subject within the Program of Instruction (1)³ are summarized below.

PSYCHOLOGY

Statistics and measurement (18 hours: presented during the first two weeks). Emphasis is placed on the utilization of statistical concepts in the evaluation of test data rather than on the calculation and practical application of statistical formulas.

Personality development (31 hours: presented during the first four weeks). Personality development under modal conditions within our culture is discussed, first longitudinally, then in cross section. Events and conditions which are associated with subsequent deviant behavior are stressed. This sequence is designed to introduce the student to the language and theory of modern psychiatry and to provide a theoretical basis for observing and recording patient behavior.

Psychological tests (70 hours: presented during the third through the sixth weeks). Each major test is presented in two phases: didactic preparation and practical application. A detailed orientation to the Wechsler-Bellevue (14 hours) is given and is followed by 12 hours of supervised practice in administering and scoring the test. Eight didactic and 8 practice hours are devoted to the administration and scoring of the MMPI. Academic preparation and practice in administering and scoring is provided for the Word Association Test (3 hours), Sentence Completion Test (3 hours), and Wechsler Memory Scale (3 hours). Orientation to and practice in administering the Bender-Gestalt (2 hours) and Draw-A-Person (2 hours) are also provided. Introductory lectures on the Stanford-Binet (2 hours), WISC (2 hours), WAIS (1 hour), several tests of organicity (7 hours), and projective techniques (2 hours) are provided; but the student is not expected to know administrative or scoring procedures. The introductory hours on the WISC, WAIS, S-B, and the tests of organicity are included in the program of instruction as an introduction for those

¹ Now at the Human Resources Research Office No. 2, Presidio of Monterey, California.

² Formerly, Medical Field Service School.

³ Copies of the Program of Instruction are available from the Army Medical Service School.

students who may receive extensive on-the-job training on these tests at their permanent stations.

Practicum (69 hours: presented during the sixth through the eighth weeks). During the practicum, each student administers the W-B, MMPI, Draw-A-Person, Bender-Gestalt, Wechsler Memory Scale, Sentence Completion Test, and Word Association Test on two occasions. The student scores and evaluates the test protocols and writes a report.

Case conference discussion (6 hours: one discussion per week). For each psychiatric case conference (see below), students are required to take notes and prepare reports on patient behavior. For one hour following each case conference, the reports are discussed. Emphasis is placed on the distinction between recordable observations and the inferences based on these observations. The patient's test data are similarly discussed and evaluated.

NEUROPSYCHIATRY

Neuropsychiatric disorders (26 hours: presented during the fourth and fifth weeks). These lectures are a continuation of the material on personality development. A description of the major categories of deviant behavior is presented. Nosological groups are discussed in terms of antecedent conditions, symptoms, treatment, and prognosis.

Case conference (12 hours: one conference per week). In the case conferences, a social history and psychological report on the patient are presented, after which a member of the staff interviews the patient before the group. The conferences conclude with a group discussion of the diagnosis and psychological dynamics of the case.

SOCIAL WORK

Introduction to social work procedures (4 hours: presented during the first week). These lectures provide an orientation to psychiatric social work and intake procedures.

Interviewing techniques (8 hours: presented during the second and third weeks). These hours consist of a discussion of interviewing techniques, including 4 hours of supervised practice and role playing in staged interview situations.

NEUROPSYCHIATRIC NURSING

Introduction to neuropsychiatric nursing and management of patients (10 hours: presented during the first and second weeks). Closed ward patient management and attitudes toward patients (3 hours), problems of suicide (2 hours), escape (2 hours), assaultive behavior (2 hours), and physical hazards (1 hour) are discussed.

EVALUATION OF STUDENTS

The instructors' estimation of the student's ability to perform the tasks specified in the job description of the MOS determines success or failure in the course. Four periodic objective examinations, covering lecture and assigned reference material, are the primary evaluative instruments. Students whose test results indicate they are unable to keep up with the level of achievement of other students, past and present, are dropped. Even if a student passes the formal examinations, he may be dropped from the course if he does not demonstrate the specific skills necessary to administer and score the basic test battery, or if, in the opinion of the faculty, he lacks the maturity to establish and maintain rapport with patients or the motivation to carry out the testing procedures in a reliable manner.

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Psychology in the News

Soft Southern Winds Are Psi-ing . . .

The Southern Regional Education Board reports in a newsletter:

On December 1, 1956, the Department of Psychology at Louisiana State University had on hand five inquiries from students about the graduate training program. Four of these five came from New York City.

On the same day, one year later, the Department had received 48 inquiries, only eight of which were from New York while the rest came largely from the Southern region. What had happened during the year to create this stepped-up interest in the psychology program?

Dr. Irwin A. Berg, chairman of the department, is not willing to give the department's recruitment program all the credit. The fact remains, however, that in the past year members of his department took part in nine radio programs, two television shows, placed feature stories in local and student newspapers, made talks before civic clubs and community groups, distributed 200 copies of the *Life* series on psychology and other material, and held a Career Day conference.

The idea behind all this "public relations work" was to inform the general public about the general need for psychologists . . . to get more students from Louisiana . . . as they would be most likely to work in the state after graduation. . . .

A most significant factor in attracting strong psychology graduate students from Louisiana has been the program of mental health training and research stipends offered by the Louisiana State Department of Hospitals.

Now Irwin Berg is on the APA Committee on Public Relations, which has been guiding the association in renewed emphasis on state and local community public relations for psychologists. If everyone in psychology were to respond with a similar campaign, one can anticipate that they would all cancel out, so far as graduates with an existing preference for psychology would be concerned. But all this Berglary would still pull in some students who might have been entirely lost to us. And the LSU psychology staff, so far as SREB reports, did not use either hypnosis or subliminal television.

* * *

Sex Without Gelt . . .

We do not have a regular department for psychologists *not* in the news. But here is an interesting quotation from a new book by Albert Ellis,

one of the most prolific scribes of psychology's tribes. Ellis writes in his new book, *Sex Without Guilt*:

With my fourth book, *Sex, Society and the Individual*, I ran into no censorship problems as far as publication and editing was concerned. . . . The *New York Times*, however, has refused to publish advertisements on this or any of my sex books—even if the ad contains nothing more than the title of the book and the name of the author. At first, large advertisers like Marlboro Books, who include scores of titles in each ad, were able to squeeze mentions of some of my volumes into their *Times*' displays. But in recent years even this privilege has been denied all sex books of my authorship.

When queried in this respect, the *Times* has never come up with a satisfactory explanation—especially in view of the fact that it frequently publishes advertisements for more conservatively attuned sex volumes.

Partly as a result of censorship, Ellis further writes that it is entirely erroneous to imagine that great profits come from studying and writing about sex. He says "this is largely bosh."

AMA Journal, Please Copy . . .

Peter J. Steincrohn, a physician and a syndicated writer on medical topics, gave a fast answer to a question the other day. Asked about stuttering, he said:

I suggest that you procure psychotherapy . . . but don't just put your finger on any name in the telephone book . . . check for qualifications with the American Speech and Hearing Association and with the American Psychological Association

Now comes the ethical question: should APA's Omission Noter write him there are other associations he might have mentioned?

From Coast to Coast . . .

A recent issue of *Cosmopolitan* published what some psychologists believe to be one of the best popular articles ever done on vocational counseling. Donald E. Super and Frederick J. Gaudet were the psychologists mainly consulted for the article by T. F. James.

Maurice L. Farber presented a paper last year on opinion-poll results in England and the United States on New Year's resolutions. One result was

a magazine request to do an article on the same subject. So, in *Parade*, he wrote:

Is it useless, then, to make New Year's resolutions? Not at all! It is valuable to stop and take stock . . . to try to understand yourself more fully . . . self-understanding is a key to mental health . . .

Roy K. Heintz is the subject of a lively interview in the Long Beach (California) *Independent*. It says:

Ordinarily Dr. Heintz delights in exposing such unscientific practices as astrology, numerology, phrenology, palmistry, and crystal-ball gazing . . . but when it comes to graphology, he hedges . . . some day, he says, it may prove to be of value . . .

On that day, the interview quotes Heintz as saying: "it will probably bear little resemblance to the practice as it is known today. . . ."

For a Proper Bankside Manner . . .

A press release states: "One thousand American physicians gathered here today for a mass check-up on their functioning as citizens, scientists, taxpayers, and providers." The dateline was Washington, and the sponsors of the meeting and the press release were the Medical Council of the Washington Metropolitan Area and the William S. Merrell Company (drug manufacturers) of Cincinnati, Ohio. The press release states further that:

. . . the doctors submitted to an examination of their changing responsibilities by ten noted experts . . . for improving their human relationships and business management . . . for planning their tax programs . . . for selecting their investments . . . planning their estates . . .

The first expert quoted in the release was APA member Ernest Dichter, described as a "motivation researcher," and the first problem he mentioned was one the physician shares with the patient: "they often do not understand each other." In the

list of items which the release said Dichter gave as advice to the physicians, the first item was "Relax and learn to accept your material aspirations as well as your ideals." The second item was "Recognize the patient's right to information about his diagnosis and treatment."

Submariner Fires Upon "Psychology" . . .

It is true that many United States schools follow a theme of giving their students courses to prepare for "life adjustment," and it also is true that these schools are under a barrage of criticism for not teaching enough "basic science and math." It could be expected that sooner or later someone would blast away directly at "psychology" as being directly implicated. The pros and cons of this are intricate, and perhaps fortunately beyond the scope of this department of the *American Psychologist*.

Rear Admiral H. G. Rickover, the original developer of the atomic submarine, has made a series of speeches on deficiencies in American education's production of scientists and engineers. He has many times criticized "life adjustment." Finally he came to this particular point: that "the student is handed a bag of know-how tricks. He is helped to become a pleasant, nicely-mannered young person, able to get along with whatever group he joins." The Admiral said this attitude has not had "wide application" but that, nonetheless, it is spread through teachers colleges and boards of education. Teachers need more stress on academic subjects and less on methods and the "psychology of teaching," he said.

This should not imply an antipsychology attitude on the part of the Admiral, however. The first atomic sub was one of the most thoroughly human-engineer-adjusted designs in the history of American technology.

—M. AMRINE

Psychology in the States

Legal Certification of Psychology as Viewed by Sociologists

In *Psychology and Its Relations with Other Professions*, there are described thirteen "criteria of the good profession." One of the criteria reads as follows: "A good profession will engage in rational and cooperative relations with other professions having related or overlapping competences and common purposes."

Several months ago APA's attention was called to the concern of sociologists that legislation for psychologists might restrict some of the applied activities of some sociologists. In accordance with our professed principles, two steps were soon taken. An informal meeting was held at which representatives of our association and of the American Sociological Society discussed their respective perceptions of the issue in question. In addition, the Chairman of APA's Board of Professional Affairs, Fillmore H. Sanford, corresponded with the Chairman of the appropriate ASS committee, Amos H. Hawley, reaffirming our desire to cooperate in clarifying the matter. By way of indicating clearly how certification is perceived by our friends in sociology, there follows the statement of their Committee on the Implications of Certification Legislation:

Sociologists are aware of the very real problems that have led psychologists to turn for a solution to certification through state legislative action. We are profoundly sympathetic. And we appreciate the sincere efforts of psychologists to identify and to emulate the principles of a "good profession." Nevertheless as sociologists we observe the movement toward certification by the states with growing concern. Our primary concern has to do with the impingement of state certification on social psychology as a branch of sociology. Perhaps it is unnecessary to point out that, on historical grounds as well as on the basis of past and contemporary contributions, sociologists believe their claim on social psychology to be as sound and as legitimate as that made by psychologists. Our freedom to continue work in that area, it seems to us, is placed in serious jeopardy by the legislative enactments psychologists are sponsoring in the various states.

The legislative acts that seek certification of the use of the undefined word "psychology" specify that the programs shall be administered and supervised by psychologists, the latter term being rigorously defined in those bills. This means that members of one profession, psychology, will judge the qualifications and thereby regulate the opportunities of members of a different profession, sociology. The

effect is only somewhat moderated under the most favorable circumstances suggested to date, that is, as represented in the proposed Michigan bill. The latter provides that the certification board, composed of psychologists, may designate an examining committee for each marginal field, e.g., social psychology, one-half the members of which may be representatives of the related profession. To appreciate the sociologist's attitude, the psychologist need only imagine his response to a proposal that all forms of psychotherapy, personality diagnosis and mental testing be declared adjuncts of psychiatry and be certified under the discretionary administration of psychiatrists.

Beyond the immediate invasion of sociological prerogatives, certification carries a diffuse and cumulative threat. The establishment of "psychology" as a legally sanctioned term may lead private and public organizations (including civil service commissions) to adopt as their own the requirement of the state boards of examiners in psychology. Thus, positions currently open to both psychologically and sociologically trained social psychologists would become inaccessible to the latter. Or stated differently, an important segment of the sociological profession ultimately would be viewed by the public as incompetent to practice its traditional craft except within the walls of academic institutions and possibly not even there.

As members of the academic community we look with dismay upon the legal certification of any term that denotes what is essentially an intellectual enterprise. A field of knowledge and discovery may be hedged about and limited to the few only at grave risk to the progress of that discipline. Should such a risk be incurred in order to secure the protection of certain specific applications of the contributions of the discipline, contributions that have resulted from free and unrestricted inquiry? We believe that certification of the inclusive term psychology will not in the long run serve the public interest. When it begins by preempting a segment of a related profession's domain, the future does not seem promising. It appears to us that psychologists are unwittingly violating the spirit of one of their own principles of a "good profession." Principle 6 states: "As an autonomous profession, psychology cannot accept limitations upon the freedom of thought and action of its members other than limitations imposed by its social responsibility and by considerations of public welfare."

For the Record. Rulings by the Attorney General of one state do not necessarily hold for other states. With this in mind, it is nevertheless enlightening to note the answers given by Florida's Attorney General to questions raised by the Chairman of Florida's Board of Examiners, Richard W. Husband:

Question: Would the intent of Section [—] be interpreted as covering such a possible situation as someone trying to avoid the issue and calling himself by some vague title as

"consultant," when he actually is rendering purely psychological services, such as using tests which are composed, used, and interpreted by psychologists?

Attorney General's Answer: It appears that the intent and the letter of Section [—] would permit a person to call himself a "consultant" or a "consultant on matters of the mind" and hang out a shingle using this word or phrase. If, however, such person claimed to be a "consultant" and then confided that he was a psychologist or psychological consultant, he would then come within the purview of the act. . . . The entire section is based too much on titles and words and not enough on acts or activities. Admittedly, Section [—] is poorly worded, but it is difficult to imagine one holding himself out as a consultant without someone asking on what subject he is available for consultations. The minute he uses any of the three terms mentioned in Section [—], he comes within the purview of [the act].

Question: Section [—] is aimed (in spirit) at controlling the activities of psychologists who offer their services on a fee basis. Specifically exempted are persons on various governmental payrolls, such as university teachers or county system school psychologists. Would you interpret that a psychologist employed 100% by a company would not need to be certified . . . ?

Attorney General's Answer: In my opinion, a psychologist, except as exempted by Section [—], would have to be certified. Section [—] exempts "any psychological scientist employed in a recognized educational setting or government-sponsored agency." I do not consider commercial companies as recognized educational settings or government-sponsored agencies.

Likewise, I would not consider any other psychologist working full time on salary basis exempt from this act unless his employer fell within the definition of the two exemptions outlined in Section [—].

Question: Are we correct in assuming that we can enter [into reciprocal] agreements with other states on the basis that they are at least as strict as Florida in granting certificates?

Attorney General's Answer: This power does not seem to be in any way restrictive, and the Board is apparently authorized to enter into agreements with other states which the Board in its discretion deems fair and equitable . . .

* * *

Smorgasbord à la State Association. The joint BPA-CSPA Program Committee finds that the tastes of state associations range widely and that what seems to be preferred is a helping of each of the topics suggested as food for thought. On the basis of a recent survey, Chairman Arthur H. Brayfield reports that preferences are rank ordered in the following way (from greatest to least interest expressed): (a) functioning of established state programs of certification or licensure, (b) role of state organizations in APA, (c) state examining boards, (d) steps in obtaining state certification or licensure, (e) public information activities, (f)

ethical standards and relationships, (g) organization and function of BPA, (h) state newsletters, (i) role of experimental psychologists in professional affairs, (j) role of the state association secretary, (k) opportunities for retired psychologists.

Accordingly, state association workshops at the Annual Convention will be organized around five basic areas: (a) certification and licensure, (b) interprofessional relations, (c) ethics (broadly conceived), (d) public information, (e) role of state organizations and function of BPA.

Meanwhile, by way of warming up for the fall meetings, the joint BPA-CSPA Committee on the Organization and Functioning of State Associations (Anne Roe, Chairman) has scheduled workshops for state association officers at each of the regional conventions. Open for discussion are the following:

1. State Organizational Problems
 - Membership
 - Officers
 - Policies and Procedures
2. Intraorganizational Problems
 - Relations with Other States
 - Relations with APA
3. Professional Problems
 - Ethics and Social Control
 - Training
 - Annual Meeting Programs
4. Psychology in the Local Community
 - Legislation
 - Public Information
 - Public Service
 - Relations with Other Professional Groups
 - Conditions of Employment of Psychologists

* * *

Committees, Vintage 1958. While most state associations undoubtedly have their committees on membership, ethics, and legislation, few seem to have given attention to the less usual, more imaginative, and most timely kinds of committees which might also serve a very real purpose. The Ontario Psychological Association, by contrast, points the way to committees-one-might-otherwise-not-have-thought-of. Suffice it to list some of them: the Committee on External Relations, with its Subcommittee on Affiliation with Other Organizations and its Subcommittee on Conditions of Employment; the Committee on Contemporary Social Issues, with its Subcommittee on Aging, its Subcommittee on Automation, and its Subcommittee on Traffic Safety. Apparently committees may be

traditional or modern. And Ontario prefers its modern.

Self-Certification. The Colorado Psychological Association has recently set up a Board of Examiners and established procedures for a system of self-certification. To be granted a Certificate of Approval for Private Practice, an applicant must satisfy the Board of Examiners that he: (a) is of good moral character; (b) has received a doctorate, with major concentration in psychology, from an educational institution of recognized standing; (c) has had at least two years postdoctoral work experience in psychology, both of which consist of adequately directed experience in the area of his specialty; (d) is a member in good standing of the CPA; (e) has paid a fee of ten dollars with his application. Further information may be obtained from: Alvin R. Mahrer; Veterans Administration Hospital; Denver 20, Colorado.

Directories and Their Preparation. State associations contemplating publication of a directory can profit from a survey recently made by the Directory Committee of the Washington State Psychological Association. Having drawn on the experience of those states which have directories, the committee made the following recommendations to the membership:

The directory would be six by nine inches in size for convenience. Three introductory pages would

be devoted to describing psychology as a science and profession, the state certification law, and the state association itself. There would follow an alphabetical listing of certified psychologists, appropriately annotated; the last section of the directory would organize names geographically, by cities.

Information suggested for inclusion under each name is: degree, address, telephone number, diploma status (if earned), and areas of specialization. The latter would be explained in the preface and accompanied by a brief description of the ethical standards restricting practice to the areas of one's competence.

* * *

State Association Officers. The following rosters of officers have been announced:

Michigan Psychological Association

President: M. Ray Denny
President-elect: Katherine W. Wilcox
Executive Secretary: Esther L. Belcher
Treasurer: Richard L. Cutler

Ontario Psychological Association

President: Kingsley G. Ferguson
President-elect: J. C. Sawatsky
Executive Secretary: Ray G. Berry

Tennessee Psychological Association

President: Julius Seeman
President-elect: Louise W. Cureton
Secretary-Treasurer: James M. Porter, Jr.

—W. J. McKEACHIE
E. L. HOCH

Psychological Notes and News

The American Board of Examiners in Professional Psychology, Inc. announces that its tenth Annual Written Examinations will be administered on November 14, 1958. ABEPP has prepared a pamphlet, *Information For Prospective Candidates*, giving specific information on requirements for candidacy, fields of certification, the nature of acceptable qualifying experience, and evaluative procedures, including written and oral examinations, and policies governing these examinations. A copy of this pamphlet may be obtained by writing to: Noble H. Kelley, Secretary-Treasurer; Department of Psychology, Southern Illinois University; Carbondale, Illinois.

Correction. The title of the paper reported on page 568 of the September 1957 issue of the *American Psychologist* as having been given by Lyle E. Bourne, Jr. at the twenty-seventh Annual Meeting of the Rocky Mountain Psychological Association should read: "Effect of Degree of Information Feedback upon the Identification of Concepts."

Luther Craig Long, Director of the Psychology Department at the Selinsgrove State School, Pennsylvania, represented the APA at the Centennial Spring Convocation of Susquehanna University on March 25, 1958.

Benjamin Shimberg, of the Educational Testing Service, represented the APA at the Annual Meeting of the American Personnel and Guidance Association on March 31-April 3, 1958.

Eula P. Egan, Director of Guidance and Research, Jefferson County Schools, Alabama, represented the APA at the inauguration of Henry King Stanford as President of Birmingham-Southern College on April 11, 1958.

Charles E. Swanson, of the Curtis Publishing Company, represented the APA at the sixty-second Annual Meeting of the American Academy of Political and Social Science on April 11-12, 1958.

Elizabeth Z. Johnson, of the Lexington Veterans Administration Hospital, Kentucky, represented the APA at the inauguration of Irvin E. Lunger as President of Transylvania College on April 15, 1958.

Michael Erdelyi, of Mary Washington College, died February 13, 1958.

Else Frenkel-Brunswik, President of APA Division 8, died March 31, 1958.

Crawford Goldthwait, of Winchester, Massachusetts, died November 20, 1957.

John V. Quaranta, of Marymount College, died March 23, 1958.

F. Kenneth Berrien, Professor of Psychology at Rutgers University, will exchange positions with **Herbert B. Weaver**, Chairman of the Department of Psychology at the University of Hawaii, for the 1958 fall semester.

Dunlap and Associates, Inc. announces the addition of **Armand N. Chambers** to its professional staff. He formerly was associated with the American Institute for Research.

Samuel C. Fulkerson, formerly at the USAF School of Aviation Medicine, has been appointed to the staff of the Psychology Division, Western Psychiatric Institute and Clinic, University of Pittsburgh.

Nathan S. Leichman and **Hy Goldman** have been appointed Coordinator and Consultant respectively of an Education Research Project on Mental Retardation sponsored jointly by the United States Office of Education and the California State Department of Education.

Charles R. Gross has been appointed Coordinator, Field Psychological Services, at George Fry & Associates, Inc., Chicago.

Elizabeth Fenwick Hamilton, formerly Elizabeth H. Laux, is now in private practice in San Pedro, California.

Senior Psychologists at Topeka State Hospital now include **Ann Q. Hozier** and **Marvin L. Kaplan**.

Frank N. Jacobson has been appointed Clinical Psychologist, Division of Mental Health, Idaho State Board of Health, Boise. He was formerly at the Columbus Psychiatric Institute and Hospital.

David Kirschner is now School Psychologist for the East Meadow Public Schools and Clinical Psy-

chologist at the North Shore Neuropsychiatric Center, Roslyn, Long Island.

The following new appointments have been made to the staff of the Department of Psychology at Dartmouth College, beginning in the fall of 1958: **Wolfgang Köhler** as Visiting Research Professor and **William M. Smith** as Associate Professor.

Theodore Landsman, currently at Vanderbilt University, has accepted an appointment as Professor of Education in the Department of Personnel Services at the University of Florida, effective September 1958.

K. A. Lifson, **Ronald F. Wilson**, and **C. K. Ferguson** have formed the firm of Lifson, Wilson and Ferguson in Dallas and Houston, Texas. **Darvin M. Winick** has been named Director of Marketing Research.

Leonard A. Ostlund, Assistant Professor of Psychology at Kent State University, has been awarded a Fulbright grant for one year to lecture at Bordeaux University, France.

John W. Reid, formerly at the Syracuse VA Regional Office, has transferred to the VA Regional Office, Wilkes-Barre, Pennsylvania.

John E. Robinson, Jr., formerly at the Personnel Research Branch of The Adjutant General's Office, is now a Program Director at the Applied Psychology Corporation, Arlington, Virginia.

Morton Zivan, formerly at the Bird S. Coler Memorial Hospital, is now Supervisor of the Pre-vocational Evaluation Unit at the Institute of Physical Medicine and Rehabilitation of the New York University-Bellevue Medical Center.

The American Association of University Women announces fellowships for American women. Both national and international fellowships are unrestricted as to field and place of study. The minimum requirement for both is that candidates must have completed the residence requirements for the doctorate before the fellowship year begins on July 1, 1958. Requests for application forms should include a statement of academic status. Application forms may be obtained after July 15

from: Associate, AAUW Fellowship Program; 1634 Eye Street, N.W.; Washington 6, D. C.

The National Science Foundation awarded a Science Faculty Fellowship to John Van Laer, a Senior Postdoctoral Fellowship to James J. Gibson, and a Postdoctoral Fellowship to Thomas F. Gilbert.

The United States Office of Education has signed a contract with San Jose State College to conduct a longitudinal study on "Personality Changes Associated with a College Education." Walter T. Plant has been named Project Director.

"Psychoanalysis, Scientific Method, and Philosophy" were discussed on March 28-29 by some 60 philosophers, psychoanalysts, and behavioral scientists at the second Annual Meeting of the New York University Institute of Philosophy.

The Department of Psychology of the Southeast Louisiana Hospital held its first Annual Symposium on February 20-21, 1958 on the topic, "Psychotherapy with Schizophrenics." As part of the department's Invited Speaker Program, Roy Schafer conducted a two-day seminar on April 21-22 on "The Psychoanalytic Theory of Ego Defenses with Particular Reference to the Rorschach."

The twenty-second National Congress of the Italian Society of Industrial Medicine will be held in Rome on 25-28 September 1958. The congress will include sessions on industrial psychology. For further information, write to: G. Pancheri; Via Boncompagni, 101; Rome, Italy.

The Psychology Speech Clinic of George Pepperdine College announces the inauguration of post-graduate courses in **Electroencephalography**. For further information, write to: Edward Ohanian; Co-Director, Psychology-Speech Clinic; 1200 West 78 Street; Los Angeles, California.

The Industrial Home for the Blind—Office of Vocational Rehabilitation Program of Professional Training in the Rehabilitation of the Blind announces training institutes which combine intensive field experience with special didactic work in the area of service to the blind. For further information, write to: Herbert Rusalem, Director of Professional Training; The Industrial Home for the Blind; 57 Willoughby Street; Brooklyn 1, New York.

APA ANNUAL CONVENTION

Forms for registering for the 1958 Annual convention and for making hotel reservations appear on these pages. The General Arrangements for the Convention were given beginning on Page 194 of the April issue of the *American Psychologist*.

NONMEMBER ADVANCED REGISTRATION FORM

SIXTY-SIXTH ANNUAL CONVENTION OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

Washington, D. C., August 28-September 3, 1958

Nonmembers of APA are requested to complete this form for advanced registration.

Please type or print:

Name: Dr.
Mr.
Miss
Mrs. _____
Last First Middle

Professional Affiliation: _____
 (to appear on badge) _____

(City) (State)

The following information is requested for the Convention Directory:

1. Expected date of arrival at convention.....
 Expected date of departure from convention.....
2. Divisional membership by number.....

When you arrive at the convention, pick up your badge and convention materials at the Advanced Registration Desk and give your Washington address to the receptionist. There will be no additional forms to fill out.

A fee of \$2.50 must accompany this form. Make checks and money orders payable to: 1958 APA Convention. Please send this form, together with the fee, as early as possible to:

Nonmember Registration
1333 Sixteenth Street, N.W.
Washington 6, D. C.

(Copies of this form may be obtained from the APA Central Office)

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Burlington	50	7.50	75	11.50	(Same as Doubles)		-	
Hamilton	40	6.00-9.50	70	10.50-13.50	75	12.00-15.00	-	
Lafayette	10	7.00-8.00	41	10.00-11.00	40	11.00-12.00	8	15.00 (double)
							9	14.00-16.00
								(double connecting, 1 bath)
Lee House	25	7.50-11.50	100	11.00-15.00	(Same as Doubles)		-	
Washington	45	8.00	80	12.00	(Same as Doubles)		4	30.00

(Note: All rates subject to Washington, D. C. 3% Sales Tax)

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Washington, D. C., August 28-September 3, 1958

Please type or print:

Name: Dr. _____
Mr. _____
Miss _____
Mrs. _____
Last First Middle

Professional Affiliation: _____
(to appear on badge)

(City)

(State)

The following information is requested for the Convention Directory:

1. Expected date of arrival at convention _____
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2. APA membership status:
Fellow _____ Member, Student Journal Group _____
Member _____ Foreign Affiliate _____
3. Divisional membership(s) by number _____

When you arrive at the convention, pick up your badge and convention materials at the Advanced Registration Desk and give your Washington address to the receptionist. There will be no additional forms to fill out. There is no registration fee for APA members, Foreign Affiliates, and Members of the Student Journal Group.

Please send this form as early as possible to:

APA Housing
Washington Convention & Visitors Bureau
1616 K Street, N.W.
Washington 6, D. C.

HOTEL RESERVATION FORM

(For hotel information, see facing page.)

The rates listed for the hotels apply only if reservations are made through APA Housing; they cannot be guaranteed by APA Housing if reservations are made after August 14, 1958. Reservations should be made as early as possible through:

APA Housing
Washington Convention & Visitors Bureau
1616 K Street, N.W.
Washington 6, D. C.

Make all changes and cancellations through APA Housing.

Please make reservations noted below at the _____:
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Room assignments will be made in the order received. If hotels of your choice are filled, the APA Housing will make the best possible arrangements in another hotel.

Be sure to list definite arrival and departure date and time:

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Hotel Reservations will be held only until 6:00 P.M. unless otherwise specified.

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